How Strong Is the Miners Union? See page 417

COAL AGE

The World's Accepted Authority on Coal Mining

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Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

Volume 28 — New York, September 24, 1925 — *Number* 13

COAL AGE

With which is consolidated "The Colliery Engineer" and "Mines and Minerals"
R. DAWSON HALL, *Engineering Editor*

The Mine Was Saved

HOW VALUABLE IS *COAL AGE* to mining men? Various people might make various answers; but what would be the answer of a man whose anthracite mine was saved from possible destruction by a method described in the magazine?

Next week C. H. Strange will tell how, when a fire, inaccessible to direct attack, was sealed off yet continued to gain rapid headway, it was remembered that months before *Coal Age* had told how a somewhat similar contingency had been met in a bituminous mine. The copy of the magazine containing this description was hastily resurrected, the article studied and the fire attacked and extinguished by pouring hundreds of cylinders of carbon dioxide gas into the sealed area. Within 40 minutes the effect of this gas was apparent in the readings of the gages on the seals. A dangerous fire that would have taken weeks or months to either quench by direct flooding or smother in its own fumes was conquered, extinguished and cooled in a comparatively short interval.

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Suppose the men who first had experience with carbon dioxide in fighting the fire in their bituminous mine had withheld their story? Suppose they had felt that telling it in *Coal Age* would be "giving away something for nothing." What would have happened to Mr. Strange's mine? Yet there are men in coal mining who feel that what they learn by experience belongs only to them.

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Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

R. DAWSON HALL
Engineering Editor

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Not Sold

THE ANTHRACITE OPERATORS, in their present controversy with the United Mine Workers, have the best case to present to the nation in the history of the industry. Their position on the cardinal points at issue is clear-cut, sound and unequivocally in the public interest. The anthracite operators are opposed to a system of negotiating wage contracts which stops production. They are opposed to a system of negotiating which makes economic pressure the arbiter of questions upon which the negotiators cannot agree. They are opposed to any change in wage scales or working conditions which will increase the price of coal to the domestic consumer. They are willing to submit their entire cause to impartial arbitration. This last offer is unqualified; there are no strings to it.

Here, if there ever was one, is a case to command widespread approval and support. And yet, nobody who takes the trouble to sample current popular opinion on the subject can escape the realization that the operators' position has made no impression on the public mind. Lay editorial discussion of the strike reveals little understanding or discrimination and even less sympathy. The industry is still in bad repute. Where the operators are not condemned separately, they are lumped with the miners in a blanket condemnation of the industry. The suspension is scored as a strike—almost a conspiracy in the eyes of some editorial writers—against the public interest. That the operators are as bitterly opposed to the strike as their critics does not find place even as a plea in mitigation.

The anthracite operators have not sold themselves to the public. To a large degree they have not tried to sell themselves to the public. This, of course, will be indignantly denied. Nevertheless, the results speak for themselves. Traditions of aloofness from the public, which were scrapped by other industries years ago, still are cherished by too many anthracite producers. Estimable, courageous gentlemen personally, they shrink from the rough-and-tumble methods by which the union leaders are able to keep public interest alert—and sympathetic. They make one or two dignified and gelid statements and retire from the field. To capitalize on gracious, personal contacts is distinctly not in their code. But worst of all, these tradition-bound leaders hamper and nullify the work of those of their own associates who are ready to fight the battle with weapons from Mr. Lewis' arsenal.

Anthracitephobia is a disease which has been coursing unchecked through the public veins for nearly ninety years. It will take more than one dose of anti-toxic publicity to eliminate it. It calls for a vigorous publicity campaign in such frequent injections that the effect of one will not be lost before another is administered. The anthracite industry, if it hopes to survive, must sell itself so thoroughly to the public that anthracitephobia will cease to exist. The only way in which that can be done is through steady, persistent, educational advertising.

General understanding of the operators' position is the best possible protection against the danger of another Pinchotian settlement. What if the union does shed crocodile tears over such a squandering of money? The job of the operators is to sell the industry to the public, not to Mr. Lewis and his followers. Unless the operators do that job, they will lose more than the present strike.

Lean a Little Heavier

A FEW YEARS AGO when the mining industry was starting to apply electric drives to machinery, an electrical engineer who did not completely design and arrange every detail of a new installation himself, was looked upon as a weak sister. As time went on more and more equipment became available and he continued to depend largely upon himself to select the proper machinery, plan his layouts and install apparatus from time to time to keep his plant up to date.

Today the need for labor-saving apparatus and the wide diversity of equipment suitable for mine service have changed matters. The mine electrical engineer can no longer hope to have the intimate knowledge of machines that he formerly had when only a few relatively simple appliances were available, he must lean more heavily upon others for assistance.

Not a few mistakes have been made in the application of machinery at some mines and usually it will be found that these errors were committed either because the engineer tried to do too much by himself or insisted upon putting his personal impress upon everything that was done.

It often happens that because a man is not sure of himself he does not undertake to initiate a new development; instead he procrastinates hoping he will some time be able to get to the job intelligently. As time goes on he finds himself in a great maze of work, too big for him to ever catch up with. As a result his company does not keep up to date as it should and reaches a stage where it cannot be persuaded to do anything but struggle along in the same old way.

Today the successful engineer has to consult with other coal company men and with manufacturers. He must also devote some of his time to discussions and meetings with men in his own profession and keep abreast of the time through literature published on subjects covering his work.

The need for greater savings by means of machinery offers the suggestion that engineers devote more time to the business of showing their companies how to reduce costs and less time to details which usually can be more satisfactorily handled by the equipment manufacturers whose reputation stands behind it.

What of Anthracite's Future?

UNWILLINGNESS TO ARBITRATE disputed points in the anthracite controversy indicates, on the part of the United Mine Workers, a distinct lack of confidence in the justice of their case. Mr. Lewis deports himself, in the matter, as a belligerent man who feels the weight of a dependable gun on his hip, who has unlimited confidence in his ability to use it and who intends to settle the present disagreement by nothing more peaceful than gunplay. It is not a good public advertisement of union labor methods, but Mr. Lewis can always rely upon his trustworthy and capable publicity department to turn bad advertising into good. Would that the anthracite operators could so much as prevent their own good advertising from being turned into bad by the clever miners.

If Mr. Lewis is a consistent man, his rejection this year of arbitration such as his union has plead for in the past, does not condemn the whole principle of arbitration, no matter what he may say. Instead, present day expediency actuates him. In other words he is willing to arbitrate only when he feels confident of victory. This attitude on the part of either operators or the union contributes nothing to the future peace of the industry, and it is the peace of the future which stands out as the biggest issue in today's conflict. The nation will be best served if, during the coming winter, it sees to it that nothing prevents the anthracite miners and operators from finishing a battle in the final treaty of which both sides will be glad to write peace guarantees for coming years.

Dramatize the Wage

DOES the public ever gain a real idea from figures? We doubt it. Engineers pride themselves on having quantitative minds. If that is so the minds of the rest are qualitative. That being so why try to appeal to them with quantitative arguments? Why use calculus to explain an idea to a man who has no calculus training? After all, the public listens to the legal lights and politicians because they talk qualitatively not quantitatively.

So we, if we would talk to the man on the street, must not put the comfort, happiness and well-being of the miner in dollars, but in homes, clothing, automobiles and village streets. Now we know the miner who pays only $8 to $12 a month for a house cannot have an impressive, well finished home. We know that the city dweller pays 25 to 30, or even 40 per cent, of his wage on rent and, consequently, people believe him well-to-do by the measure of his rent and by the excellence of his clothing. He breathes comfort; he exudes prosperity.

Only by endeavoring to sell the miner a desire for a better house and better clothing, a better village and an automobile in better condition can we give the public a physical and not a numerical idea of the good fortune of the miner and his excellent wages.

In the cities, model houses have been erected to develop an increased interest in good housing, and it would be well if the mines had such places. In some cases even the house of the superintendent and the company office are not places which would serve as models of housing or exhibits of how to be comfortable.

When houses are built by the miners themselves, the architecture and arrangement are often deplorable, though there are cases where the homes so built have been more than usually elaborate. In fact, in one town of about 10,000 inhabitants, the house built by one of the miners is easily the most pretentious and permanent of any in the neighborhood—bankers and millionaires not excluded.

It is a fact that mine villages greatly need architects, not only to design but to superintend construction for a plan if well made is often marred by faulty execution and improper material. The mine engineer is really not any too well fitted to be the final arbiter as to house construction details or village layout.

Need for New Circuit Appliances

AS A RESULT of the present economic conditions in the coal fields there is growing an increased demand for new devices to be used with drilling, loading and transporting machines. Many different types of machines have been designed and applied to the mines and not a few are still in a state of development. However, progress is being made along several definite lines and suitable circuit-control appliances and connectors are needed.

Naturally enough, nearly all appliances now used in the mines are driven by electric motors and in many instances are supplied by alternating-current energy. There is, however, a steady growth in the use of direct-current drives.

Heretofore the general tendency inside the mines has been to operate stationary equipment such as hoists and pumps by alternating-current energy, and moving apparatus such as locomotives and cutters by direct current. Perhaps the reason for this was that the direct-current motor best suited the equipment it had to drive and the alternating-current motor possessed the characteristics necessary for the stationary machines.

But today we find in the mines equipment which is sometimes stationary but frequently moved to new locations. For example, a coal loading conveyor is permanently set when it is in operation but must follow the working face from time to time. Such machines, therefore, embody the characteristics of both stationary and fixed appliances and consequently must be controlled, protected and installed to suit the new conditions.

Plugs, receptacles, fuse boxes, connectors, switches and control devices have been developed to a high degree for direct-current mine circuits used with locomotives and other portable machines, so also have similar appliances been designed for stationary alternating-current machines. But now comes a need for such three-wire appliances which will possess the features of one-wire and two-wire direct-current fixtures.

GAS ENGINEERS and gas men generally are watching with considerable interest the experiment of a small gas company in Sheridan, Wyo., which is using the local lignite deposits, which are mined adjacent to the city, for the manufacture of coal gas supplied to the residents and industries of Sheridan for heating and cooking purposes. This is believed to be the first time that lignite has ever been used successfully in coal gas manufacture to the entire exclusion of other materials.

How Strong Is the Miners' Union?

In Bituminous Fields Has John Lewis Lost Past Gains By Obstinately Clinging to 1920 Wages?—Research Shows Labor's Deep Influence on the American Coal Industry

By Sydney A. Hale
Special Contributor, *Coal Age*
New York City

IS THE POWER of the United Mine Workers of America on the wane? Has the strength which in 1922 moved the President of the United States to confess that, "except for such coal as comes from the districts worked by unorganized miners, the country is at the mercy of the United Mine Workers" been so dissipated that the organization headed by John L. Lewis is no longer the controlling factor in the labor situation in the bituminous coal mines of the nation? Have the gains so painfully made in the early days of the movement and so effectively consolidated in later years been flung away in an obstinate and unreasoning attempt to maintain a wage basis that is economically out of line with competitive costs?

Readers of *Coal Age* do not need to be told that these are questions which form both warp and weft of much of the earnest discussion now going on in coal circles. Nor is the interest confined to the mining industry. Government officials are known to be deeply concerned over the outcome. Large consumers of fuel recognize that the existing state of affairs is one of the danger spots in the general business set-up. Economists are drawn to a study of the situation, finding the complexities and ramifications of the subject a challenge to their serious attention. Some alarmists in the ranks of the publicists profess to see a threatening collapse which may wreck the entire economic structure of the land.

Union Gains Ground Between Strikes

In the general strike of 1919 the power of the United Mine Workers was such that at one time or another during that six weeks' suspension it was able to close down 71.6 per cent of the actual productive capacity—measured by 1918 performance—of the bituminous coal fields of the United States. Between the end of that strike and March 31, 1922, union control weakened notably in eastern Kentucky and in the low-volatile regions of West Virginia, where the war had given the organization a temporary foothold. Nevertheless, when the call went out from Indianapolis for another general strike three years ago, the union was able to marshal enough support to cut off 73.3 per cent of the productive capacity.

How was this possible? The handicap of an unexpired contract in the western Kentucky field, the losses in the State of Washington and in West Virginia were more than counterbalanced by the development of unexpected strength in two districts in which non-unionism was regarded as impregnably entrenched. The workers in the Connellsville region, who had not staged a demonstration against their employers in over thirty years, walked out and at one time during the prolonged struggle had 81 per cent of the production in that field tied up. In Somerset County, the non-union stronghold of central Pennsylvania, at the peak of the union attack 88 per cent of the productive capacity was down. And in Westmoreland County, where as recently as 1911 the workers had given up a fight for collective bargaining after a contest lasting over a year, there was a 65 per cent shutdown as compared with a 5 per cent shutdown in 1919.*

The effectiveness of the United Mine Workers in these

Table I—Maximum Percentages (Based on 1918 Output) of Productive Capacity in Bituminous Coal Fields Closed by General Strikes in 1919 and 1922

District	Production on 1918 (Net Tons)	Maximum Percentage of District Capacity Closed By Strikes 1919	1922	Theoretical Maximum Annual Tonnage Capacity Closed By Strike—in Net Tons 1919	1922
Central Competitive Field					
Illinois	89,291,000	100	100+	89,291,000	89,291,000
Indiana	30,679,000	100	100+	30,679,000	30,679,000
Ohio	46,055,000	100	97+	46,065,000	44,541,000
Western Pennsylvania	48,299,000	100	95+	48,299,000	45,884,000
Pennsylvania (other than Western Pa.)					
Central	61,629,000	83	92	51,362,000	56,699,000
Connellsville	35,677,000	...	81	.....	28,898,000
Northwestern	8,051,000	100	67	8,051,000	5,394,000
Somerset	7,194,000	6	88	432,000	6,331,000
Westmoreland (a)	17,701,000	5	65	885,000	11,506,000
West Virginia and Maryland					
Cumberland—Piedmont	7,073,000	98	85	6,932,000	6,012,000
Fairmont (b)	20,104,000	90	87	18,094,000	17,490,000
Kanawha	13,324,000	88	90	11,725,000	11,992,000
Kenova-Thacker	7,024,000	...	*	.....	35,000
Logan	10,307,000	...	...	.....	.....
New River	9,292,000	98	58	9,106,000	5,389,000
Panhandle	3,255,000	61	44	1,986,000	1,432,000
Pocahontas and Tug River	23,128,000	...	†	.....	116,000
Winding Gulf	5,156,000	...	15	.....	773,000
Virginia	9,041,000	8	...	723,000	.....
Kentucky					
Harlan	3,202,000	60	21	1,925,000	672,000
Hazard	2,364,000	...	...	.....	.....
Northeastern	7,109,000	70	8	4,976,000	568,000
Western	10,833,000	58	7	6,283,000	758,000
Southern Appalachian (c)	11,712,000	100	57	11,712,000	6,676,000
Alabama and Georgia	19,252,000	48	...	9,241,000	.....
Michigan	1,465,000	100	100	1,465,000	1,465,000
Iowa	8,192,000	100	100	8,192,000	8,192,000
Southwestern Interstate Field					
Arkansas	2,227,000	100	96	2,227,000	2,138,000
Kansas	7,562,000	99	94	7,486,000	7,108,000
Missouri	5,668,000	99	93	5,611,000	5,271,000
Oklahoma	4,813,000	100	79	4,813,000	3,802,000
Texas	2,261,000	50	25	1,131,000	565,000
Colorado	12,408,000	55	53	6,824,000	6,576,000
New Mexico	4,023,000	15	15	603,000	603,000
Utah	5,137,000	...	45	.....	2,312,000
North Dakota	720,000	30	37	216,000	266,000
Montana	4,533,000	90	98	4,079,000	4,442,000
Washington	4,082,000	100	50	4,082,000	2,041,000
Wyoming	9,438,000	95	100	8,966,000	9,438,000
Totals	579,281,000	71.6	73.3	414,625,000	425,355,000

(a) Includes Latrobe, Greensburg and Ligonier districts.
(b) Includes all of northern West Virginia except Cumberland-Piedmont and Panhandle districts.
(c) Includes Tennessee and all of southeastern Kentucky except Harlan County.
+ Exclusive of country banks and local stripping operations.
† Less than one per cent.

This is the first of a series of articles by Mr. Hale on the labor influence on the industry. The remaining articles will appear in forthcoming issues.

*The percentage figures given represent not the percentage of mines closed down, but rather the percentage of miners absent from work and, therefore, show the part of the normal producing power of the district shut off by the strike. For a discussion of how these percentages were arrrived at the reader is referred to *Mineral Resources of the United States*, 1921, Pt. II, pp. 502-7; *ibid*, 1922, Pt. II, pp. 515-19.

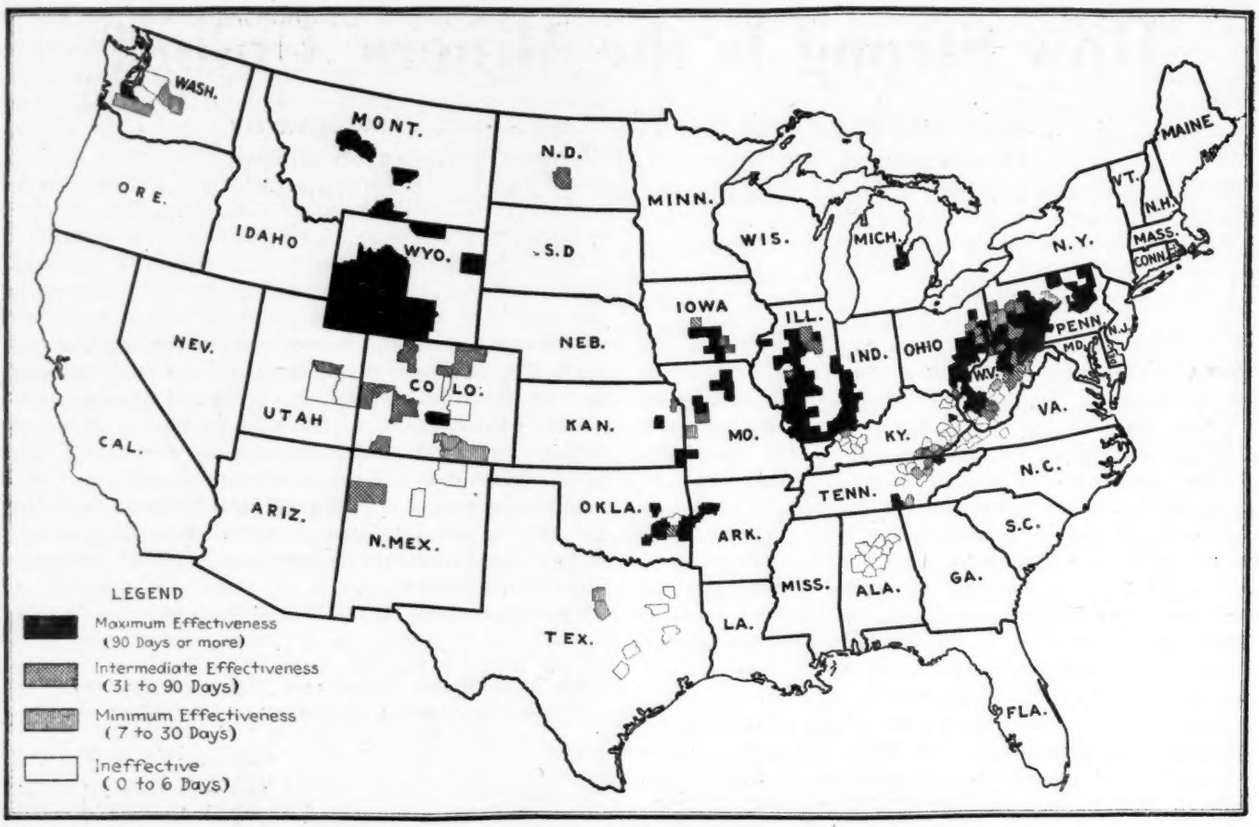


Fig. 1—The United Mine Workers of America at the Flood Tide of Power

This map, based upon statistics collected by the United States Geological Survey, shows the maximum effectiveness of the general strike of 1922 in the coal producing states of the country. The number of days each field was down was determined by taking the average number of days lost through strikes per man employed. As a corrective against over-estimating the importance of the intensity of the suspension in some of the minor producing districts, the map should be read in connection with the figures given in Table I showing the maximum productive capacity of each district.

two most recent direct trials of its strength, summarized in Table I, gives the necessary yardstick with which to measure the changes that have taken place since the truce signed at Cleveland, Ohio, in August, 1922, marked the beginning of the end of the general bituminous strike which had started four and one-half months before. That truce continued the basic rates—other than day rates—fixed by the United States Bituminous Coal Commission in 1920, and averaging 27 per cent above the war-time scale approved by the United States Fuel Administrator, until the following March. It also continued the advance in day rates over the Bituminous Coal Commission award won by the district strike of 1920—strikes, according to Mr. Lewis, encouraged, if not fomented, by certain operators to stop the payment of bonuses in Illinois. Another truce extended these rates until April 1, 1924. By the Jacksonville compact signed a year ago last February these rates are to be continued until April 1, 1927.

These facts are thus briefly restated because present discussion of the future of the union revolves largely around the wage rates established in 1920 and continued by the Jacksonville agreement for nearly two more years.

The post-armistice boom of 1920, with the extraordinary demand for tonnage at premium prices made it possible for union operators as a whole to pay the peak wages and still retain attractive profits for themselves. The competition for labor during those hectic months also supported the maintenance of comparable rates of pay in the non-union districts. The reaction which followed the bursting of the 1920 bubble started downward readjustments in these latter fields. Many operators, parties to the contract with the union, talked of the necessity for deflating wages, but made no move which might be construed as a violation of the existing agreements. Any hope of deflation, however, went glimmering to destruction with the 1922 strike.

The country entered that strike period with probably the greatest tonnage in storage in the yards of the larger consumers in the history of the industry. By Sept. 1, however, that reserve had been pulled down from over 63,000,000 to approximately 22,000,000 net tons, the second lowest reserve on record. The market created by this depletion of the stocks in storage and the demands for fuel for current consumption in 1923 introduced during that year a more sustained high level of weekly production than ever before witnessed in the bituminous coal trade.

But the benefits were not evenly distributed. Compared with 1918, only five states—Alabama, Kentucky, North Dakota, Virginia and West Virginia—were able to increase their output, and in those states non-union operations predominated. Illinois, on the other hand, fell back nearly 10,000,000 tons; Ohio, over 5,000,000 and Pennsylvania almost 7,000,000 tons. The losses in the strongly non-union counties of Fayette, Somerset and Westmoreland, however, were equivalent to 93 per cent of the total decline in Pennsylvania tonnage. Kentucky output increased over 13,000,000 tons, practically all of which came from the eastern part of the state; West Virginia increased nearly 18,000,000 tons.

The major producers in the union regions kept in the running through greater efficiency—man and mechanical. Even in that field, however, they were by no means in a class by themselves. Working 70 days less than in 1918, the total production for the country declined only 15,228,903 tons. An increase in the total number of men employed from 615,305 to 702,817 was responsible in part for keeping up production, but the controlling factor was increased output per man. Had the 615,305 workers reported employed in 1918 reached the same daily average output per man as the 702,817 workers reported for 1923 the 1918 group would have taken only 215 days to raise the record-breaking tonnage of that banner year. The 1918 average number of days worked, however, was 249.

There was still another factor which helped to postpone the demand for a readjustment. That was the greater concentration in mining. As explained in detail in an article appearing in an earlier issue of *Coal Age* (*Shifts in Production of Bituminous Coal*, Tryon, McKenney and McKinney, Feb. 26, 1925, p. 329), throughout 1923 there was a steady increase in the number of idle mines, the percentage of these to the total number reporting to the United States Geological Survey jumping from 8.4 per cent on Feb. 17 to 32.0 per cent on Nov. 17; a decreasing number of mines operating one to three days a week and an increasing percentage working four to six days a week.

In spite of the handicaps of higher wage rates, Pennsylvania, still predominatingly union, was able to operate an average of 213 days that year. Allegheny County, in the heart of the Pittsburgh field, averaged 233 days. Illinois, which is, except for small country banks, completely unionized, averaged just eleven days less than West Virginia. Franklin County, in the southern Illinois field, lagged only six days behind McDowell County, West Virginia, and ten days behind Mercer County. Working time in the lowly Sangamon County district of the central Illinois field actually exceeded the average for far-famed Logan County, West Virginia, by seven days.

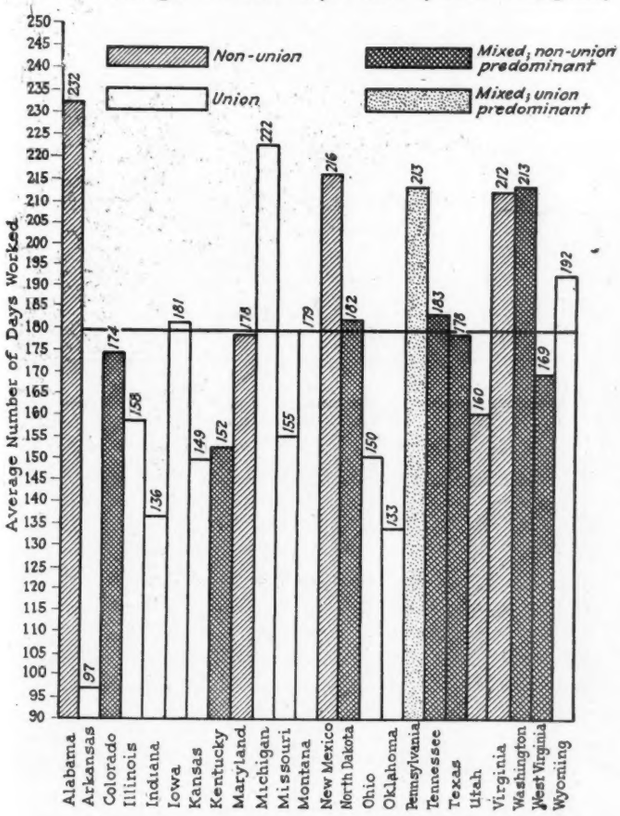


Fig. 2—How Bituminous States Work When Demand Is Good

This chart shows the average number of days worked in the bituminous coal producing states in 1923. Seven out of the eleven strictly union states failed to equal the average working time for the country as a whole; two out of the five strictly non-union states also fell below the national average. In the semi-organized states, four out of the seven predominatingly non-union averaged fewer days than the country as a whole.

The net results of these and other factors influencing 1923 operations were that the better situated producing companies throughout the country were able to show a profit on their year's business. This was done despite the fact that average spot prices declined from $4.38 per net ton in January to $2.18 in December and that the average realization on all tonnage mined fell to $2.68, as compared with $3.02 in 1922; $2.89 in 1921, a year of marked depression; $3.75 in 1920, the year in which the basic wage scales now in effect in the unionized districts were established, and $2.58 in 1918. This last figure is quoted because prices in that year were fixed by the United States Fuel Administrator after an examination of production costs and presumably gave full weight to the element of wages.

Wage Ratios Increase

As previously stated, the United States Bituminous Coal Commission award, effective April 1, 1920, represented, it was announced at the time of its promulgation, an average increase of 27 per cent in the wage bill of the industry. The wage bill was in turn estimated—before adding this 27 per cent—at 57 per cent of the total reported value of coal produced. The total value of the bituminous tonnage mined in 1923 was reported by the United States Geological Survey as $1,513,327,000—an increase of $21,517,000 over the total for 1918. Wages in 1918, on the 57 per cent basis, absorbed approximately $857,491,000 of the reported value of the fuel. The increase authorized in 1920, uniformly applied to the slightly smaller 1923 tonnage, would give an estimated wage cost of $1,060,615,000, an increase of $203,124,000 as compared with an increase in value of only $21,517,000.

These figures, of course, are subject to all the vices of averages for an industry as vast and as complex as the bituminous coal industry. In the present case, these drawbacks are further magnified by the changes in wage status in 1923 as compared with 1918. The 1918 wage basis was the 1917 scale and this was generally observed throughout the soft coal regions when the Bituminous Coal Commission made its award. Therefore, the application of the 27 per cent increase to 1918 or 1919 figures gave a fair approximation. Between 1920 and 1923, however, there were certain fields which abandoned the Coal Commission scale for the 1917 basis or some modification thereof. To that extent, therefore, the application of 1920 figures and percentages exaggerates the wage total—possibly ten per cent, probably less. What the figures do show, however, is the trend, and the comparisons indicate this with startling clearness.

Through 1923 there was widespread discontent among coal producers over the wage scales. In some of the non-union districts which had been keeping pace with the union base rates, the competitive pressure became so strong that downward revisions were made. For the

most part, however, little serious consideration was given to the question of operators in organized fields severing their alliance with the United Mine Workers of America. Those producing companies with up-to-date plants and alert merchandising organizations carried on with profit. Another large group of operators, who are constitutionally opportunists, held on in the hope that some dislocation of supply would intervene to curtail output and run up the prices on their tonnage to sky-rocket figures. And a third group of constitutional optimists hung on in the belief that conditions with the coming of the new year would justify the maintenance of the 1920 bases of pay or, if not, that the new wage agreement to be negotiated would relieve the organized fields of their burdens.

The signing of the Jacksonville agreement ended all such dreams. Average spot prices, which reached $2.25 during February, 1924, dropped to $1.98 by midsummer and closed the year at $2.06. The average for the year, $2.08 probably was close to the average realization on all tonnage as many of the contracts made on 1920 bases in 1922-23 expired March 31, 1924, and were not renewed. Operators so fortunate as to persuade consumers to sign up again shortly before the Jacksonville meeting knew that April 1, 1925, would mark the end of most of those contracts. Tonnage, too, began to slide off rapidly as the prospects of a general strike vanished. The number of companies who began to write their month's operations in the red grew.

Under those conditions it is not surprising that the ink had hardly dried on the signatures affixed to the Florida compact before there were demands for a modification of the wage rates therein named. Such demands naturally came first from the semi-organized fields, notably the union mines of central Pennsylvania, which were receiving the full force of the drive launched by the non-union fields to supply a greater share of the decreased coal requirements of the consumers. In the organized part of the Kanawha district an overwhelming majority of the operators, after fruitless negotiations, declined to renew contractual relations with the union.

No important union district has escaped some manifestation, some evidence of a determination to carry on without the union since it was impossible to carry on with it. In some instances, these breaks have been given a prominence all out of proportion to the tonnage involved; in others, perhaps, the extent of the defection has been unduly minimized. A correct appraisal of the effect of these changes must rest upon a knowledge of the conditions in each major field.

These Are Some of the Men Who Make Island Creek Mines Outstanding

Many of these operating officials and executives have been at the Island Creek Coal Co.'s group of mines in Logan County, W. Va., for years. They have seen the company's production mount as the organization grew in industrial importance. This year they expect their properties to ship at least six million tons. In the background of the photograph is shown the home of W. A. Hunt, general superintendent, at Holden, W. Va.

In the picture the men are, back row, left to right: W A. Hunt, general superintendent; J. J. Foster, auditor; H. L. Bradshaw, electrical engineer; E. R. Dunsford, assistant superintendent of Mines 11 and 12; J. Lindley, superintendent of Mines 11 and 12; R. G. Lazzell, assistant superintendent of Mines 7 and 8; A. J. Alexander, assistant superintendent of Mines 15, 16, 17 and 18; R. E. Salvati, superintendent of Mines 15, 16, 17 and 18; Roscoe Garrett, master mechanic at all the operations.

Front row, left to right: A. R. Beisel, general manager; J. H. Madison, superintendent of Mine 20; Mike DePietro, superintendent of Mine 21; W. J. Crutcher, manager of commissaries; Ed Mooney, superintendent of Mine 1; L. T. Dodd, mine inspector; W. S. Parsons, superintendent of Mines 7 and 8; Ed White, general carpenter foreman; L. D. Thompson, foreman of mine electricians.

Mine Substations Properly Equipped and Located Help Cut Down Power Costs

By J. E. Borland
General Engineering Department, Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa.

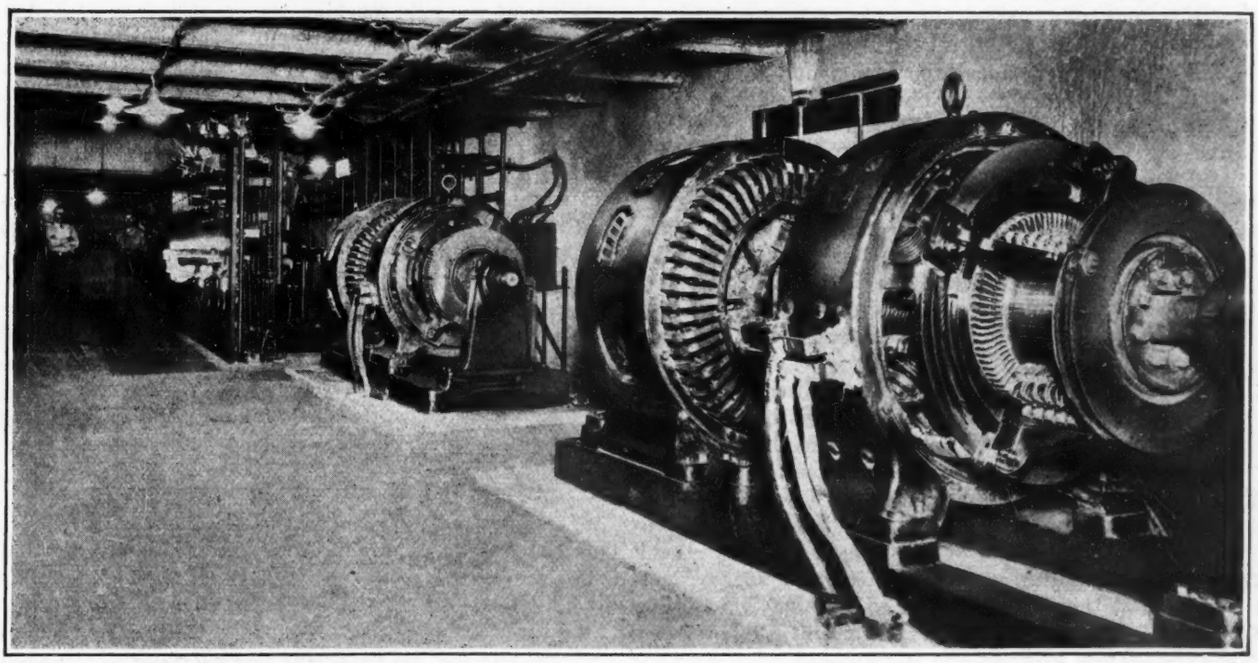
DEVELOPMENT in the application of electric power to coal mining has long since passed the point where it is considered necessary to compare the advantages of this service with other possible forms of drive. The only exceptions are certain applications, such as the main ventilating fan and the man hoist of a shaft mine, for which steam drive is often used through the belief that it will furnish greater insurance against interruption of service. The benefits derived are often questionable if the cost of operation is taken into consideration.

It is always possible to use the more economical electric drive for any mechanical operation and provide against interruption by adding a standby gas engine unit, arranged to drive the fan directly, or coupled to a low-frequency generator to supply power to alternating-current motors on the fan or man hoist, operating these at speeds reduced in proportion to the drop in frequency and voltage. Such a unit is needed only in emergency and with occasional tests it is always available for service within a few minutes. It is, therefore, possible to use motors for any operation in the production of coal, with assurance of power supply at any vital point.

This applies particularly to those cases where power is received at the mine in the form of alternating current, either purchased from a public utility company or distributed from a power station maintained by the coal company. There are still numerous mines of moderate size which are isolated from a reliable distribution system, and these often have a direct-current generating plant installed near the mine opening. Purchased power always has an advantage over such small plants, and depending on the life of the mine and other considerations, it often proves economical to change over to such service if it becomes available.

In some operations where a large power demand is made by a group of mines in a given locality a generating station of proper capacity is located at the most convenient point with respect to load distribution, water supply, etc. Such a station may be operated with economy and reliability approaching that of purchased power, particularly if there is a supply of fuel with low market value, and a convenient source of good water. With this system as well as with purchased power, transmission over a considerable distance is necessary so that power is delivered to the mines in the form of alternating current at a voltage of 2,200 or higher.

The principal underground application of power in coal mining is usually to locomotives for main haulage or gathering service, and as the characteristic of the series wound, direct-current motor is best adapted to mine locomotive service, the direct-current system is used for underground distribution in all mines using trolley locomotive haulage. It is possible to use alternating-current motors for other applications such as



By Getting Close to the Center of Load Much Better Voltage Is Maintained on the Power Circuits and Less Energy Is Lost

In this underground substation two 300-kw. synchronous motor-generator sets change the alternating-current energy to 275-volt direct-current energy which is supplied to the mining equipment. Another advantage of these machines is that they help in a large measure to correct the lagging power factor created by induction motors on the alternating-current system

pumps, fans, air compressors, cutting machines, loading machines, etc., but with the trolley circuit carried throughout a mine it is seldom economical to install a separate alternating-current distribution system, and direct-current motors are generally used on these drives also.

With power received in the form of alternating current, a means of converting this to direct-current power is necessary at or convenient to the opening of every mine using trolley locomotive haulage.

The equipment used for this purpose may be a rotary converter or a motor-generator set, the latter consisting of a direct-current generator driven by either a synchronous motor or an induction motor. The synchronous motor is used practically always because of certain operating advantages, notably the possibility of power factor correction and its constant speed, which are not provided by any other type of alternating current motor.

As the name implies, the synchronous motor-generator set consists of two machines, an alternating-current synchronous motor and a direct-current generator, the rotating elements of which are connected directly together. The stator of the synchronous motor is provided with a distributed polyphase winding which may be designed for high voltage, so that in many cases the full line voltage may be used without the necessity of installing step-down transformers.

Standard machines are wound for either 2,200 volts or for 4,000 volts, three phase, 60 cycles. The rotating part carries a multipolar, direct-current field winding, usually with six poles giving a speed of 1,200 r.p.m. on a 60-cycle circuit. The field is excited from the direct-current generator in case the direct-current voltage is 275, but with 600-volt generators a separate 125-volt exciter is added to the set, so that the rotor of the motor is the same for either 2,300- or 4,000-volt stator windings. A squirrel-cage winding is provided in the pole faces which permits the motor to be started as an induction machine, and adds to its stability in operation.

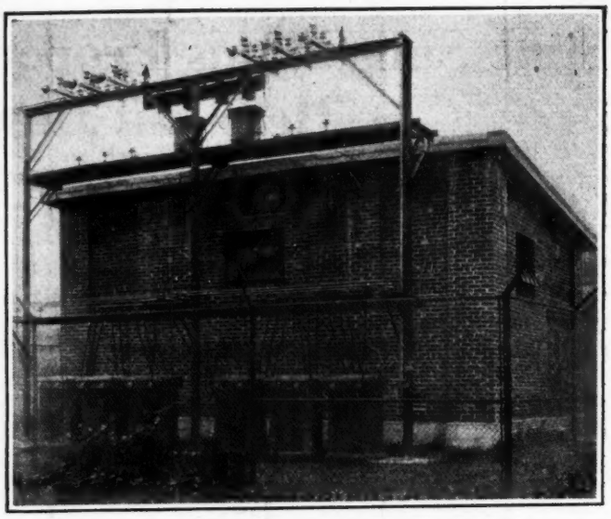
The direct-current generator is compound-wound and usually is provided with a rising voltage characteristic to compensate in part for the drop in voltage in the direct-current feeders on heavy load.

SWITCHBOARD EQUIPMENT

The standard switchboard equipment for a synchronous motor-generator set includes a motor panel and a generator panel mounted side by side, with the starting and running breakers, auto-transformers, field rheostats and auxiliary apparatus mounted at the rear on pipe frame work.

The set is started by closing the switch connecting the motor winding to low voltage taps of the auto-transformers, all other switches being in the open position and the motor field permanently connected to the armature of its exciting machine. Under the induction motor action on the pole face windings of the synchronous motor, the set comes up to speed and will lock into step within a minute. The motor field excitation should then be increased to a value which tests show will produce the minimum rush of current when the transfer is made to the full voltage. The running switch is then closed, and the motor field rheostat is adjusted to give the desired power factor.

Adjustment of the generator field rheostat will then give correct generator voltage, and the direct-current



Permanent Substation Houses Two 150-Kw. Rotary Converters

Sometimes there is no better place than the outdoors in which to locate a power converting substation. This one is equipped with two rotary converters supplied from outdoor type transformers.

circuit breaker and knife switch can then be closed. If the set operates in parallel with others nearby, the equalizer switch should be closed before connecting to the line. A common direct-current voltmeter with plugs to the different machines should be used to adjust voltages to the same value before paralleling.

Proper division of load may be obtained by adjustment of the generator field rheostats, and with the voltage characteristics made suitable for parallel operation at the time of installation, the generators will divide the load in proportion to their ratings over the entire range of load.

The other type of machine often used in a mining substation is the rotary of synchronous converter. This consists of a single machine the construction of which is very similar to a compound wound direct-current generator, with taps taken off the rear of the armature winding to six collector rings carried on the shaft. Its design and proportions are different from those of a direct-current generator, however, and it has a proportionally larger commutator than a generator of corresponding rating. The synchronous converter is supplied with alternating-current energy at its slip rings and delivers direct-current energy at the commutator.

With respect to the external circuits it has the essential characteristics of a synchronous motor on the alternating-current side and those of a direct-current generator on the direct-current side. Since the alternating-current and direct-current voltages of the machine are induced in the common armature winding by the same field, there is a fixed ratio between these voltages.

This ratio is influenced to some extent by the design of the machine, but is approximately 0.72 for a standard machine, wound for six-phase, diametrical connection. This means that a 275-volt converter requires approximately 198 volts on the alternating-current slip rings, and three transformers to supply the proper voltage accordingly are necessary with each converter. These transformers have a high-tension winding wound for the line voltage and are provided with reduced voltage taps to adjust for low voltage on the line. Taps are also provided on the low-tension winding so that reduced

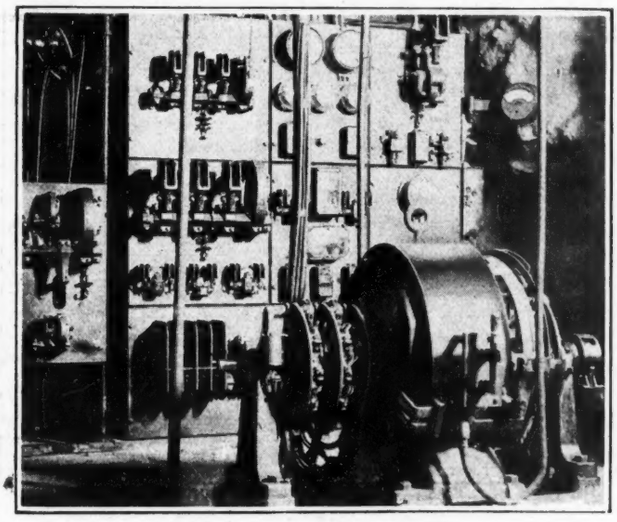
voltage may be applied to the rotary converter during starting.

Switchboard equipment for the rotary converter includes an oil circuit breaker for the high tension side of the transformer, a three-pole, double-throw, knife switch for starting, a two-pole, double-throw, field switch, field rheostat, direct-current carbon circuit breaker, knife line switch, and meters.

In the larger ratings of the modern design of commutating pole converter, it is necessary to raise the direct-current brushes from the commutator by a brush-lifting device to prevent injurious sparking during the starting period. Two brushes of opposite polarity are left down to carry the shunt field current. With the brushes raised the oil circuit breaker is closed, connecting the high tension windings of the transformers to the line. Then the double-throw, knife switch is closed on the starting contacts which connect the slip rings to the reduced voltage starting taps. The machine comes up to speed and locks into step by induction motor action on a squirrel-cage winding in the field pole faces.

If the direct-current voltage builds up with reversed polarity it is corrected by reversing the field switch momentarily, returning it to the operating position when the direct-current voltmeter reaches zero. When correct polarity is indicated the starting switch is thrown to the running position. The brushes may then be lowered and the direct-current breaker and line switch closed, an equalizer switch being closed first if the converter operates in parallel with others.

In many respects the characteristics of the rotary converter and the synchronous motor-generator set are similar, and while the starting and switching equipments differ in some details, it cannot be said that one is more difficult to operate than the other. There is no particular difficulty in operating rotary converters in parallel, and with proper adjustments of fields and reactance on the alternating-current side satisfactory division of load will be obtained. As in the case of direct-current generators, equalizer connections are necessary with rotary converters operating in parallel. With parallel operation it is also advisable to provide reverse-current relays to trip the circuit breakers, and a speed limit device should be used on the machine to prevent possibility of overspeed on inverted operation.



Outfit Quickly Put in Service

This rotary is installed in a simple yet efficient manner. The cables are suspended overhead instead of being placed in underground conduits.

While the reliability of the rotary converter is possibly not quite as good as that of either the motor or generator, making up a motor-generator set, the reliability of the motor-generator set is determined by two machines instead of one with the rotary converter, so that there is little to choose between the two types from this standpoint. The rotary converter has been thought a little more sensitive to flashover than the direct-current generator, but trouble from this source is rare with properly designed machines. The rotary converter is inherently a low-voltage machine so that the factor of safety of the insulation is higher than with the synchronous motor wound for high voltage. The synchronous motor, however, is less affected by disturbance of the power supply.

CONSIDER OPERATING CONDITIONS

The decision between rotary converters and motor-generator sets for a mining substation is properly made through consideration of their respective characteristics, first costs and operating costs, taking into account the nature of the power supply and the terms of the power contract, particularly the clause on power factor. If the conditions are such that one equipment shows little advantage over the other, the decision usually is determined by the personal preference of the engineer making the selection. Under most conditions satisfactory operation is obtainable with either type of equipment.

The first cost of the rotary converter and transformers is about 90 per cent of that of an equivalent motor-generator set without transformers, but this will be offset to some extent by the more complicated wiring of the rotary converter and transformers. A further saving may be made in the building as the rotary converter requires less floor space than does the motor-generator set and the transformers may often be installed on the outside.

The efficiency of a rotary converter is considerably greater than that of a motor-generator set, for example, the combined efficiency of a 150-kw. rotary converter and transformers at full load is about 91.5 per cent, while the efficiency of a 150-kw. motor-generator set at full load is 85.2 per cent. The light load losses of the rotary converter are also less than those of the motor-generator set, the no-load inputs being about 5 kw. and 19 kw. respectively. The result of these differences is that less energy will be consumed by the rotary converter than by a motor-generator set on the same load, and this saving will be greater if the machines are required to operate for long periods at light load, as, for example, to supply power to several small motors during non-working hours.

One great advantage of the synchronous motor generator set is the ability to operate the motor at leading power factor, and thus correct to a greater or less extent a lagging power factor load caused by induction motors and transformers on the alternating-current line, the amount of correction depending upon the relative size and characteristics of the synchronous and inductive loads.

To secure this feature standard motor-generator sets for mining service are equipped with synchronous motors designed for operation at 80 per cent leading power factor. Most power contracts provide for a reduction in rates when a high power factor is maintained, so that even with a greater energy consumption due to

its lower efficiency, the power bill may be less with the synchronous motor-generator set.

The important operating advantage of the synchronous motor-generator set is the independence of the alternating-current and direct-current circuits. While the alternating-current and direct-current voltages of a rotary converter have a definite ratio in a given machine, the voltage of the direct-current generator may be regulated entirely independently of the alternating-current voltage applied to the synchronous motor, and the alternating-current circuit need not be considered in adjusting the direct-current machine for proper voltage characteristics and parallel operation.

Variation in voltage on the alternating-current line will have no effect on the direct-current voltage of the motor-generator set, whereas the direct-current voltage of the rotary converter will vary in proportion to any change in the alternating-current voltage. In case the frequency of the power supply varies, the speed of the motor-generator set will follow with proportioned variation in direct-current voltage.

SELECTION OF TYPES

Frequency variations have little effect on the direct-current voltage of the rotary converter. The frequency of the power supply is practically constant in most cases, but considerable variation in the line voltage is often obtained so that the synchronous motor-generator set has the more desirable operating characteristics.

The rating of machines to be used in a mining substation is determined by the maximum peak, the average demand and the maximum demand sustained for any considerable length of time. Sufficient capacity should be installed so that the maximum peak will be within the 100 per cent momentary overload guarantee, and so that overheating will not occur during periods of heavy sustained load.

When the number of motors in use and their ratings and operating characteristics are known, the required substation rating can be readily calculated, by taking into account the probable maximum demand and the diversity factor of the load. The substation rating in kilowatts usually may be about 50 per cent of the total horsepower of connected motors, because of the diversity factor. The power required for development of a mine can be estimated with fair accuracy by comparison with similar existing operations, and it usually is desirable to allow some reserve capacity in the first substation installed to provide for additional load as the mine is extended. Other units are added if the need for more capacity develops.

If a mine depends upon one substation for its power supply it is preferable to divide the total capacity required into two units, so that a tie-up will not be caused by trouble with one machine. A saving in the power will also be effected by taking one unit out of service if it is necessary to supply a small demand in non-working hours. The higher cost of installing two machines instead of lumping the capacity in a single unit is warranted by the added insurance, as the loss in production through a complete tie-up might easily wipe out the difference in a short time.

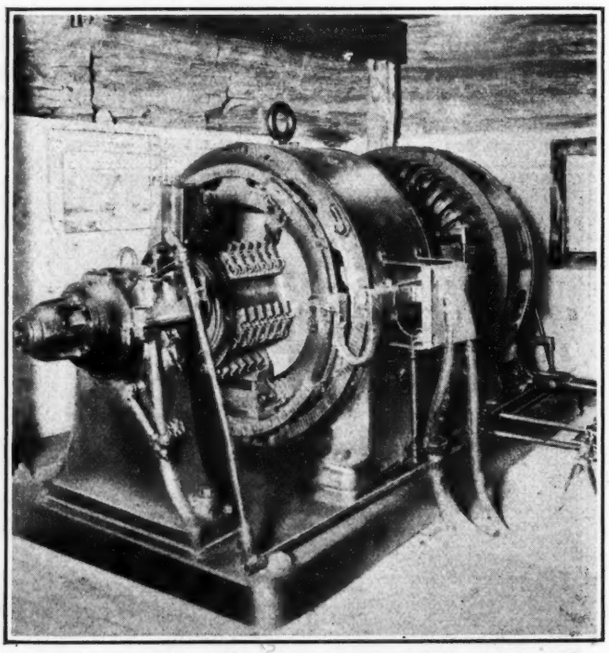
The first substation usually is installed convenient to the mine opening to save feeder copper and so that it may be given attention by men employed regularly at other work on the surface, in case a regular attendant is not present. The direct-current feeder circuit at first usually consists of a single 0000 trolley wire and bonded rail return. As the development of the mine progresses, with increasing load and movement of the load center to a greater distance from the substation, additional feeders in parallel with the trolley wire and return become necessary to maintain suitable voltage at the motors.

In many cases the waste due to low voltage at the motors is not fully appreciated. The voltage drop in the distribution circuit represents a proportional loss of the power delivered by the generating equipment, which serves no useful purpose. That is, if the substation is carrying a load of 1,000 amp. at 275 volts, it is delivering power at the rate of 275 kw., and if the average voltage at the motors is 200 volts, the line drop is 75 volts and the power loss 75 kw., which is more than one-quarter of the substation output.

The loss in power is by no means all the waste, however, for with low voltage the motor speeds are reduced, with consequent loss in production. Putting it another way, the capacities of machines are impaired, requiring more units to produce the required tonnage. Another item, often overlooked, is the increased motor maintenance caused by low voltage. Shunt or compound motors, such as used on pumps, compressors, etc., decrease in speed with reduced voltage, the drop in speed being proportionately less than the drop in voltage because of weakening of the shunt field strength. Such drives usually require practically a constant torque, and as the torque is proportional to the product of the field strength and the armature current, weakening of the field with low voltage requires an increase in the armature current to carry the load.

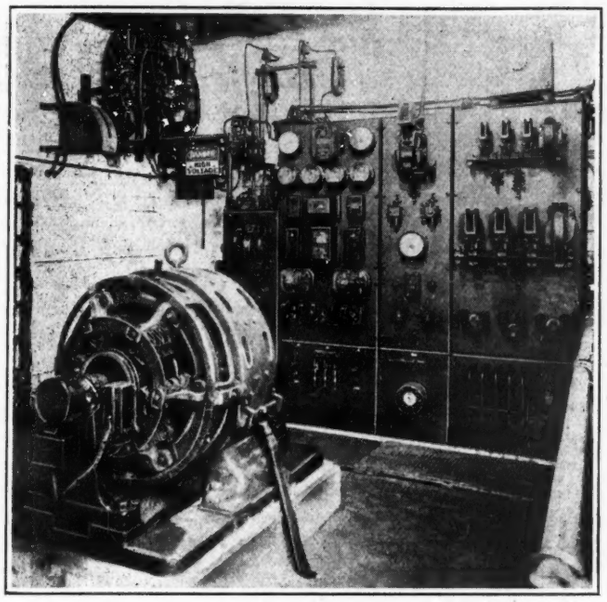
This results in overheating and frequent burnouts unless the drives are sufficiently over-motored to allow for such abnormal operation. Standard motors of this type are rated for operation at 230 volts and may be operated at 10 per cent less voltage without injury.

Series motors used on locomotives, cutting machines,



Inside Substation Equipment Which Is Started by a Push Button

Automatic switching equipment is provided for this 200-kw., 275-volt synchronous motor-generator set. The control apparatus not only starts and stops the outfit but always stands ready to guard and protect it and the outgoing circuits from damage.



Small Units Made Automatic Require Little Attention

Here is a 150-kw., 275-volt rotary provided with automatic control and located inside the mines. The switching equipment clearly shown in the background comprises all the control apparatus sufficient to provide safe, reliable operation.

loaders, etc., decrease in speed almost in proportion to the reduction in voltage. While the current taken by these motors is not affected, the loss in speed requires them to be in service longer, and since they are rated on an intermittent basis, this often results in excessive temperature and deterioration of the insulation on the windings.

These items are reflected in the cost per ton of mining coal, so the problem of maintaining proper voltage should be considered on an economic basis, and a balance obtained between the cost of adding to the feeder capacity and the saving effected thereby, making allowance for the somewhat intangible items of better operating speeds and motor maintenance.

In calculating the capacity of a distribution system using a rail return, the total cross-section of the rails can be used provided they are properly bonded and cross-bonded, the resistance of bonds being a small part of the total. This part of the system should be carefully installed and maintained, as track bonds are often easily damaged by derailments and other causes.

When additional capacity in the system becomes necessary, bare, stranded, copper conductors may be added in parallel with the rail return. The positive feeders paralleling the trolley wire usually consist of rubber insulated, braid covered, stranded conductors carried on insulators along the rib or overhead, and connected to the trolley wire at intervals by means of feeder clamps. When adding feeders it is advisable to estimate requirements several years in advance, so as to avoid the expense of frequent changes.

In operations which have been advanced to a long distance from the original opening, it often proves more economical to install additional converting equipment near the load center rather than go to the expense of installing heavy feeders to deliver the desired voltage. This practice has been assisted by the development of automatic switching equipment, which permits operation without any attention other than an occasional inspection by one of the electrical men and thus obviates the necessity of a regular attendant.

Alternating-current energy usually is carried to the substation over a wood pole line, but when this is not practicable the high-voltage, alternating-current cable may sometimes be carried along one of the main entries, suitably protected in underground conduit.

Where the mine workings are close to the surface the converting equipment often is installed in a building on the surface and direct-current feeders run down a borehole, air shaft or other opening. A large part of the cost of the building can be avoided by installing the substation underground and running the alternating-current feeder to the inside. The cost of transporting materials and equipment in rough country is an item upon which a saving often can be made by locating the substation in the mine.

For carrying the alternating-current line into a mine, a three-conductor, lead-covered cable is advisable, and if the cable is suspended in a borehole or shaft, an armored sheath may be necessary to carry the weight. Pot heads should be used at each end to seal the cable and exclude moisture.

An underground substation should be located as near as practicable to the load center and preferably along an entry that will be kept in good condition throughout the life of the section, so that the station will be accessible for inspection and maintenance. The equipment should be installed in a clean, dry room, and provision should be made for ventilation by diverting air to the room or installing a small fan to cause a circulation of air through the room. In gaseous mines, ventilating air should be taken from the intake air course.

Automatic Stations Becoming Popular

Automatic switching equipments for mine substations usually are arranged to start from a push button or time switch, and so are not strictly automatic as the term is understood in railway work. With this exception, however, all operations in starting and protecting the equipment are performed automatically, and more efficiently than possible with manual control, as no false moves are made. Protection from overload, overheating, unbalanced operation, low voltage, excess speed and hot bearings is automatic, and the station is locked out of operation by any trouble requiring the service of a maintenance man, the nature of the trouble being indicated by an annunciator type of relay. The value of this type of equipment for mining work is indicated by its swiftly increasing use.

Whether underground or on the surface the substation equipment should be installed in a fireproof room with ample space for safety and accessibility. Sufficient headroom should be allowed, and an I-beam installed over the axis of each machine to facilitate handling the equipment. A concrete floor is to be preferred, and the location of equipment should be planned and conduit placed before pouring the floor. With properly drained pits and conduit, lead-covered conductors are not necessary in wiring. The bedplates of machines should be carefully leveled and grouted in place to obtain an even footing and avoid vibration.

The mining substation in most cases might be regarded as the heart of the power equipment, and the utmost care is warranted to insure the greatest economy and reliability. It has been the endeavor of this article to point out that these features are obtained not only by careful selection of the size and type of equipment, but also by a thorough study of the distribution of load and location of stations.

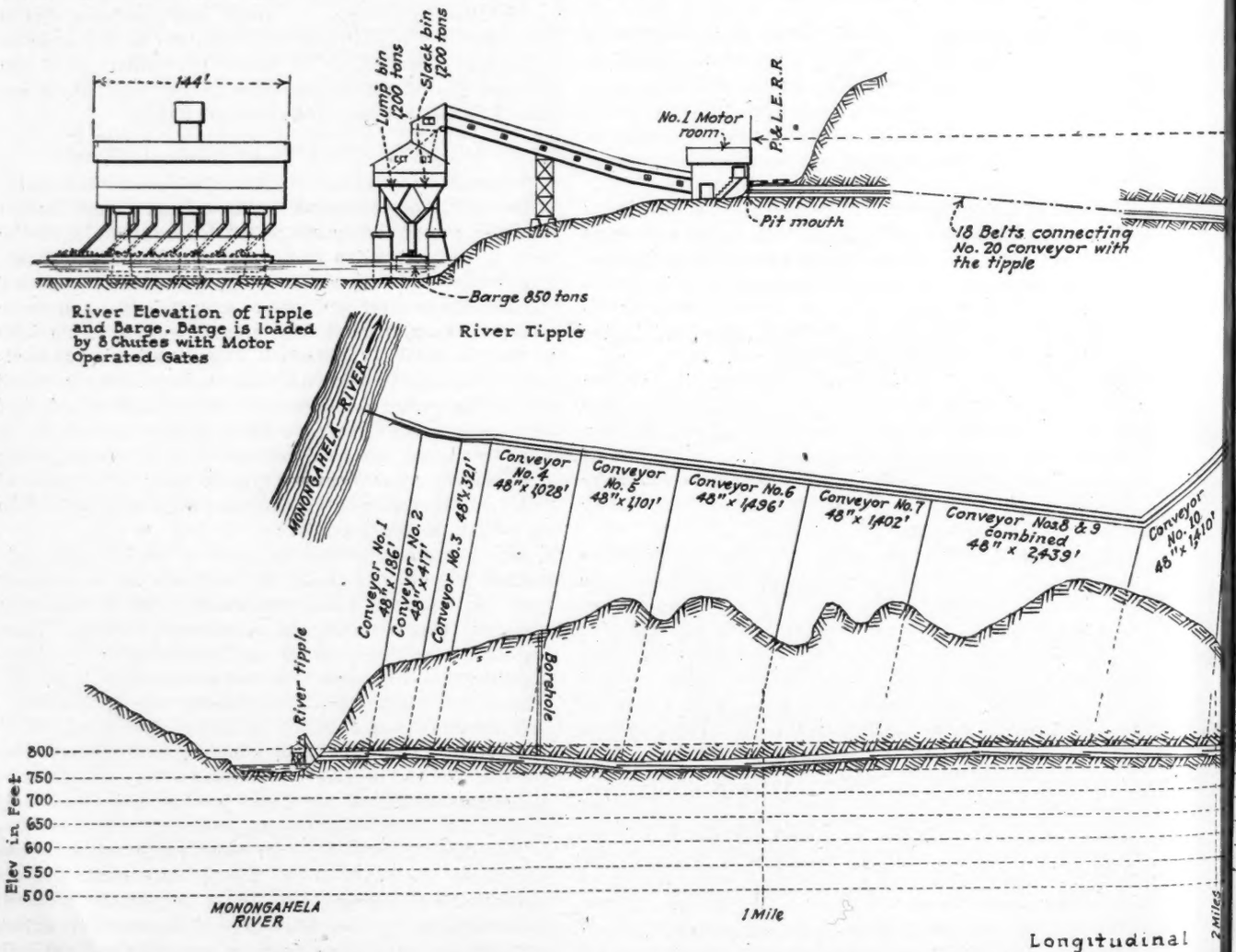
Frick Conveyor System Proves Its Efficiency

FEW INSTALLATIONS of coal-mine machinery or equipment have ever attracted more widespread attention than the system of underground conveyors installed several months ago by the H. C. Frick Coke Co., to transport coal from the Colonial mines to the Monongahela River and there load it onto barges. This installation represented so radical a departure from current practice that it immediately arrested the attention of mining men everywhere and much comment and conjecture were indulged in long before the machinery was finally put in motion. From the start, however, this installation proved a success and it is understood that several other conveyor systems of a similar type are now under consideration both by the owners of this one and by other companies.

Although the principal dimensions of this installation have already received publicity the more salient of them may well be repeated. The total length of the conveyors is 22,927 ft. and the total height through which the coal is raised amounts to 357 ft., 7⅞ in. Originally this conveyor system was made up of 20 sections or separate belts, but in January, 1925, belts Nos. 8 and 9 were combined into one unit, making a section 2,439 ft. long or the longest single conveyor belt in the world. Prior to the combination of these two sections belt No. 11 was the longest in the system, its length being 1,513 ft.

Alternating current at fairly high potential is employed to drive the various elements of this system. Thus, each section is actuated by an independent motor. All of these machines are of the wound-rotor type for 2,300 volt, 3-phase, 60-cycle current, and all operate at 900 r.p.m. The entire system is controlled from No. 1 motor room.

In order to bring this current into the conveyor tunnel three boreholes have been sunk at various points along its course. The position of these holes as well as the plan and elevation of the entire line may be seen in the accompanying illustration. It will be observed that this conveyor system does not, as might at first be supposed, extend in a straight line from the loading to the discharge point. On the contrary, changes of direction each amounting to almost 45 deg. are introduced between the combined section, belts Nos. 8 and 9, and section No. 10 and also between sections Nos. 12 and 13.



Plan, Cross-Section and a Few of the Details o

It will be observed that the plan of this system is not straight, although in this illustration the cross-section is so drawn. No. 1 motor room is close beside the P. & L. E. R.R. tracks near the bank of the Monongahela River. In many respects this

Conveyor Test Data After Installation

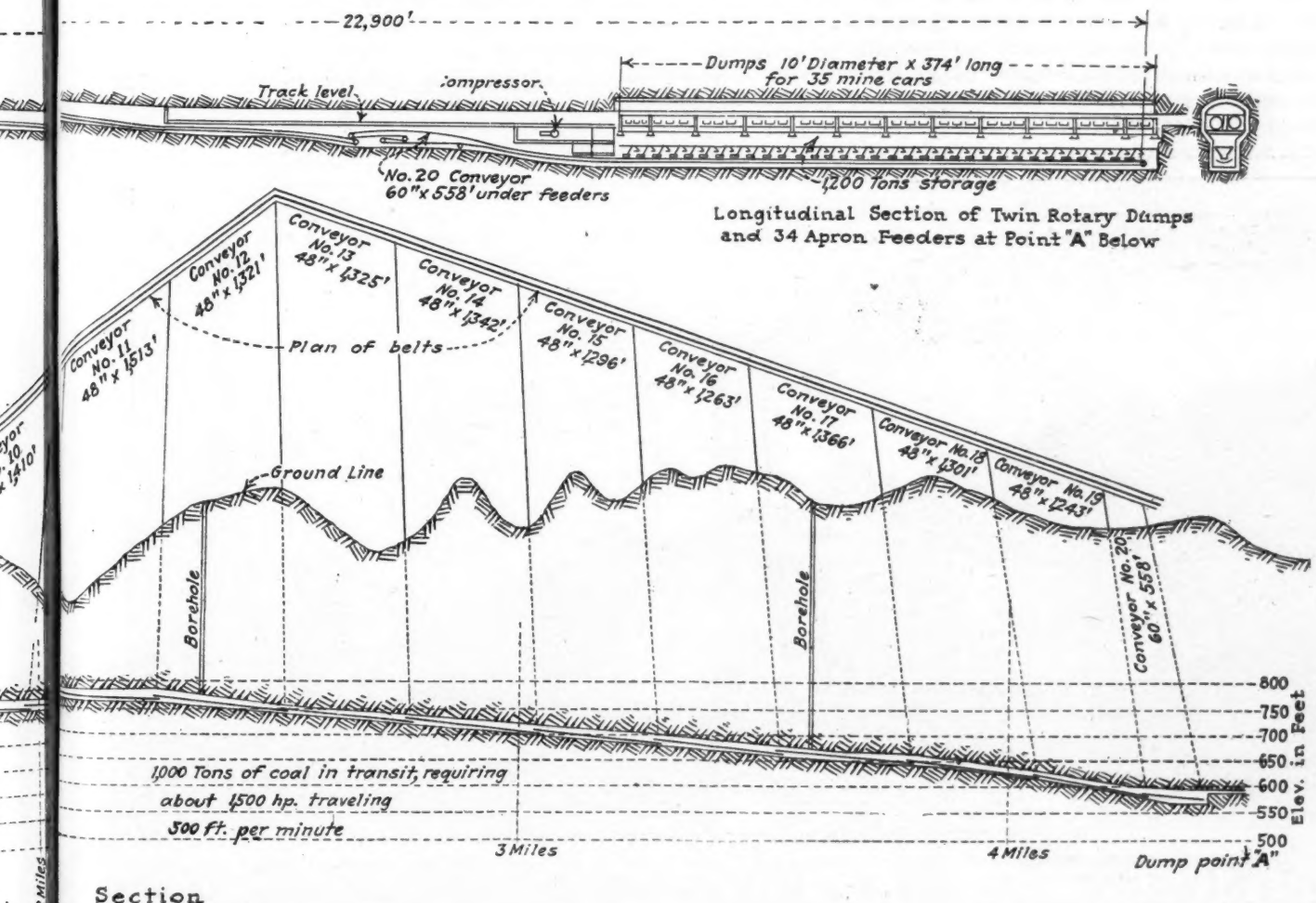
Belt No.	Length in Ft.	Lift Ft.	Tons Carried for Day	Total Kw.-Hr. for Day	Time That Belt Ran, Min.	Time That Belt Carried Load, Min.	Average Load Tons per Hour	Kw. Demand for Empty Belt	Add Kw. Above Empty Demand to Carry Average Load	Kw. to Lift Load Average	Level Belt Demand Measured as Additional Power Above Empty Demand Kw.	Hp.	Constant Kw. per 100 Tons per 100 Ft. based on Column 13 Kw. 100T/100 Ft.	Hp. 100T/100 Ft.	Kw. per 100 Ft. of Conveyor Empty Belt
1	786	43.4	6,346	460	368	352	1,080	19.2	51.6	39.8	11.8	14.2	0.139	0.167	2.44
2	417	8.3	6,418	174	360	327	1,180	12.8	14.1	8.3	5.8	7.0	0.118	0.142	3.35
3	321	4.8	6,460	144	350	326	1,192	12.8	9.3	4.9	4.4	5.3	0.115	0.138	4.00
4	1,028	19.9	6,500	410	395	350	1,115	24.0	35.0	18.9	16.1	19.3	0.140	0.168	2.33
5	1,101	21.1	6,854	420	390	333	1,235	27.0	36.7	22.2	14.5	17.5	0.105	0.128	2.45
6	1,496	4.2	7,122	410	370	350	1,222	31.1	29.0	4.4	24.6	29.5	0.134	0.178	2.09
7	1,402	−12.2	6,884	330	395	389	1,060	28.8	17.5	−11.0	28.5	35.2	0.192	0.230	2.03
8	1,499	1.5	6,750	400	415	361	1,120	28.8	27.9	1.4	26.5	31.8	0.158	0.189	1.92
9	939	11.1	7,032	358	376	361	1,142	25.6	26.0	10.8	15.2	18.2	0.142	0.170	2.73
10	1,410	12.3	7,883	440	389	354	1,336	24.0	37.0	14.0	23.0	27.6	0.122	0.147	1.70
11	1,513	3.2	7,250	400	388	359	1,212	28.8	30.2	3.3	26.9	32.2	0.146	0.176	1.90
12	1,321	29.6	7,271	530	375	340	1,282	32.0	52.0	32.3	19.7	23.6	0.116	0.139	2.42
13	1,325	22.9	7,252	480	374	342	1,272	26.5	47.2	24.8	22.4	26.9	0.132	0.159	2.00
14	1,342	24.4	7,085	490	377	345	1,232	26.0	49.0	25.6	23.4	28.0	0.141	0.169	1.94
15	1,296	25.4	7,341	500	367	334	1,320	24.0	49.9	28.5	21.4	25.7	0.125	0.150	1.85
16	1,263	27.9	7,939	430	400	350	1,362	26.4	50.1	32.3	17.8	21.4	0.103	0.124	2.09
17	1,366	19.1	6,225	440	355	340	1,100	26.0	42.0	17.9	24.1	28.9	0.160	0.192	1.90
18	1,301	34.0	7,235	520	370	363	1,196	24.0	53.3	34.6	18.7	22.5	0.120	0.144	1.84
19	1,243	36.0	7,847	650	375	353	1,334	28.8	71.7	40.8	30.9	37.1	0.186	0.223	2.32
20	558	20.7	7,421	307	440	283	1,575	12.8	48.7	27.8	20.9	25.1	0.238	0.285	2.30

Belts in this system have a capacity for handling 1,500 tons per hour when running at a speed of 500 ft. per minute. Ordinarily about 1,000 tons of coal is continuously in transit and 1,500 hp. is required to operate this conveyor system. Only one belt in the entire system, No. 7, has a net drop and this amounts to only slightly over 12 ft. All of the others lift the coal the total amount of this elevation varying from 1½ ft. in belt No. 8 to over 43 ft. in belt No. 1. Belts Nos. 1, 2 and 3 are fitted with a single-pulley type of drive; all other sections have tandem drives. All tandem-drive gears boxes are duplicates.

All the various belt sections are geared together, the head pulley of one section being connected to the tail pulley of the next section. Thus should any belt cease running, a ratchet will come into engagement and the section behind must either drive the one ahead or must also stop. This prevents the piling up of the coal in the chutes.

Adequate protection from falls of roof is afforded throughout the length of the conveyor tunnel by steel timbering where local conditions demand and by brick arches where high caving has taken place.

This conveyor system receives its coal from bins



Section

e Frick Underground Coal Conveyor System

tipple resembles a railroad tipple. Thus eight chutes working simultaneously. A can be moved up or down stream by means barges are floated under it and loaded by barge can be loaded out in 10 minutes. It of a barge mover.

under a rotary dump 374 ft. long or capable of discharging 35 to 40 mine cars simultaneously. This dump is operated by compressed air, the compressor being located near its inner or river end. The No. 20 belt is fed from the bin or hopper beneath this dump by 34 duplicate feeders, driven by a single motor. This hopper is capable of holding 1,250 tons of coal.

At the opposite end of the conveyor system the coal is delivered to a tipple on the Monongahela River where barges are loaded. These barges are 26 ft. wide and 175 ft. long. Each is capable of carrying 850 tons of coal. Each storage bin at the tipple is capable of holding 1,200 tons. Coal is delivered to each barge by means of 8 chutes operated simultaneously. A barge thus can be loaded out in 10 minutes. Each shuttle conveyor on the tipple can handle 1,000 tons of coal per hour. All gates and chutes as well as the barge mover are controlled from the operator's room under the bins.

From the time when this conveyor system was first installed up until July 1, 1925, it had handled a total of 2,598,304 tons of coal. This meant an average daily performance of approximately 10,500 tons. In the light of such a performance it is not strange that other similar installations are being seriously considered both by this and other coal producing companies.

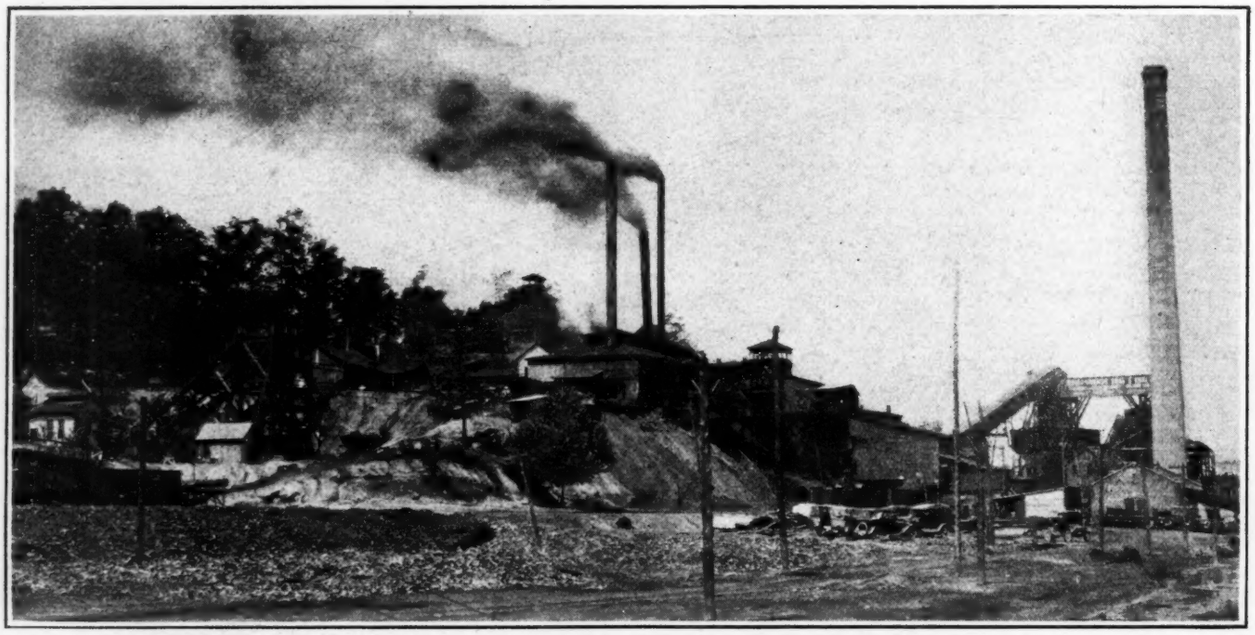
Are Separate Traveling Ways A Safety Factor?

Separate traveling ways should be provided in mines, and should be on intake air. Employees walking along haul roads are exposed to hazards, even where standard clearance and shelter holes are provided, Frank Hillman, safety inspector for the Woodward Coal and Iron Co., Mulga, Ala., told the Mine Inspectors' Institute of America at the Peoria convention this year. Today, electric haulage is the means of transportation of coal in many mines. Longer trips are hauled at a higher rate of speed. And in case of derailment, cars usually get over in the clearance space. Even where shelter holes are provided, we are not always sure that the employee will get in one when he sees or hears the trip coming. Then again, where electric haulage is used, the trolley wire is usually placed on the side of the entry opposite the traveling side. In many mines the wire is about 5 ft. above the level of the track and is not shielded. When tools are carried by hand, such as bars or drills, there is the hazard of striking the wire and causing an accident. Then again, an employee may strike the wire with his head. I have known of fatal accidents from this cause.

Where rope haulage is used, there is danger of stepping on a roller, or, in the opening under it. During hoisting time the rope may rise up, or where it is on a grade, cars may break loose and run back.

Several years ago I investigated an accident where an electric motor was pulling a long trip of loaded cars up a grade, when near the top the coupling broke, part of the trip ran back to the bottom of the grade, where it wrecked at the mouth of a heading. The cars struck a number of miners, on their way to working places, causing the death of four and injury to seven.

In producing headings, the haulage hazard is not as great, due to the smaller number of men traveling, and fewer number of cars and trips. And as miners enter their working places at different points, it would entail a heavy expenditure to provide a separate traveling way.

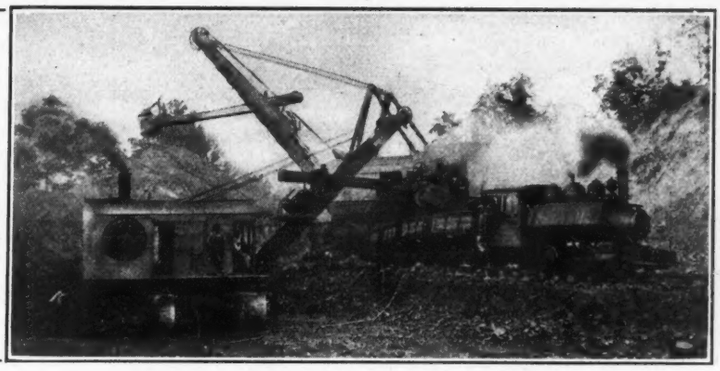


This Mine Adds to Its Life by Going Deeper to Another Bed of Coal

About 18 months ago, at No. 1 mine, the Norton Mining Co., or Nortonville, Ky., started production from the No. 9 bed. At present this coal is brought up through the 280-ft. shaft, the low, wooden headframe of which is seen at the left in the illustration. Work is about to start in driving a shaft, 80 ft. upward, to connect with the bottom of the 200-ft. main shaft of the No. 11 bed. A hole has been drilled from the bottom of the old shaft down to the No. 9 seam. This will serve to check the location and to help to dispose of any gas encountered. The newly-extended, two-level shaft will be the main hoisting shaft for both measures. The 165-ft. smokestack, seen at the right, was but recently completed. It will furnish natural draft for the new power plant now under construction. A new steam hoisting engine will be installed as soon as the shaft is extended to the lower level. The Norton Mining Co. is a subsidiary of the Monro-Warrior Coal & Coke Co.

Coal Stripping in West Kentucky

By J. H. Edwards
Associate Editor, *Coal Age*,
Huntington, W. Va.



FROM HIGHWAY and railroad contracting to coal stripping is a natural step for the five Dempster Brothers who now operate one of the largest strip mines in the country. One of the secrets of successful contracting is the wise selection and intelligent application of high-capacity equipment. A few years ago the steam shovels used by such contractors were considered marvels of size and strength. Today they are dwarfs beside the huge stripping shovels used in daylight mining. Coal stripping is primarily an excavating rather than a mining problem. As a result it has fallen to men experienced in excavating to take the lead.

The stripping operation of the Dempster Coal Co. is located at Dempstertown, near Earlington, in the West Kentucky field. In this vicinity the No. 9 bed outcrops in places. Over large areas it is covered by a rather soft overburden less than 75 ft. in thickness. This is unfavorable to underground mining but favorable to stripping. The acreage leased by the Dempsters is owned by the West Kentucky Coal Co. This firm, although a large producer, confines its activity to underground work, leaving the recovery of its shallow coal to interests such as those represented by the Dempster organization.

The coal bed at Dempstertown averages 54 in. in thickness and is free from partings. It lies practically horizontal, but the overburden is by no means uniform in thickness. The surface ordinarily would be called "rolling" ground. This means that, in general, it is not possible to prosecute mining on a straight line but instead it must be advanced in irregular fashion conforming to the surface topography.

The method followed is to take a development cut around the outcrop, that is as close to it as the quality of the coal will permit, then to make successive cuts toward the center of the hill until the entire area is mined or until a point is reached where the overburden is too thick for economic removal.

The large stripping shovel is followed by a small one that loads the coal, directly from the solid, into side-dump cars. The entire strip of coal exposed by the spoil shovel is not loaded but a berm, upon which the haulage track is located, is left along the advance side. Usually the coal is kept loaded out to within about 200 ft. of the stripper. It is necessary to maintain a certain distance in order to have track space for the trip of empties being loaded.

Each producing unit consists of a stripping shovel, a coal-loading shovel and the necessary cars and locomotives for hauling the coal to the tipple and keeping empties spotted within reach of the coal-loading machine. Two complete units of this kind are in use at the Dempster mine. The smaller consists of a Bucyrus model 225 stripping shovel followed by a model 50-B loader. This equipment is shown in action in the headpiece. A 6-cu.yd. bucket is used on the stripper and one of 2 cu.yd. capacity on the smaller machine which is a loader.

The larger unit consists of a Marion model 350 stripping shovel and a model 27 loader, of the same make. Figs. 1 to 5, inclusive, illustrate this equipment. The large stripping machine weighs 438 tons, and when shipped from the factory formed a load for 14 cars. The boom is 90 ft. long and the dipper stick 68 ft. The weight is carried on double-flanged wheels, four to a

In the headpiece one of the two coal-producing units employed at the Dempster mine is shown in operation. The 54-in. bed of clean coal lying practically level is dug from the solid by a shovel with a 2-cu.yd. dipper. A berm is left to support the loading track, the coal shovel being kept a few hundred feet in rear of the stripper, thus assuring sufficient track space for the empty cars.

Fig. 1—The Noon-Hour Shutdown

Stripping operations require large capital investments and consequently shutdowns of whatever nature are costly. From the mine owner's standpoint the operating crew's luncheon is an expensive meal. The long reach of the stripping machine is emphasized by the size and height of the spoil bank at the left in the illustration.

Fig. 2—Cutting Around the Outcrop

At the point here shown the overburden does not exceed 25 ft. in thickness, whereas in other parts of the property as much as 65 ft. is sometimes encountered. The coal is immediately overlain with a hard shale but the dipper dislodges this formation without the aid of explosives. Sizable trees and large stumps seem merely to whet the stripper's greedy appetite.

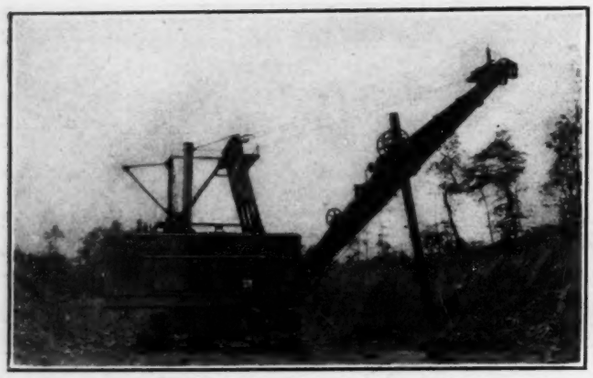


Fig. 3—The Giant at Rest

This is one of the largest stripping shovels yet produced. As shipped from the factory knocked down, it formed a load for 14 railroad cars. The mule below the boom is not a miniature or toy type but a good-sized draft animal.

truck, with a truck at each of the four corners of the under frame. Each truck is connected to the machine through the medium of a hydraulic jack, which facilitates leveling. All wheels are drivers, and the track on which they operate consists of 6-ft. lengths of 120-lb. rail. No ties are used, the rails being laid directly upon the top of the coal.

This "350" shovel was designed for an 8-cu.yd. bucket, but one of 6-cu.yd. capacity has been substituted in order to make it possible to dig most of the overburden without shooting. In Figs. 1, 2 and 3, the large shovel is shown making a development cut around the outcrop of a new territory. The maximum thickness of overburden in such a cut is not over 25 ft. as contrasted to 65 ft. which is the greatest that the shovel has handled to date.

Picking and preparation of the coal produced is accomplished at the modern, four-track, 2,500-ton tipple shown in Fig. 6. Loading facilities consist of two booms, an egg chute and a nut chute. The usual sizes shipped are 6-in. lump, 6x3-in. egg, 3x1¼-in. nut and 1¼-in. screenings. The production record to date is 2,430 tons loaded in 7½ hours.

This production was reached in less than two years after February, 1923, when preliminary work was begun on the development of the mine. This is a good record considering the fact that much construction work was necessary. A water supply for the steam equipment was provided by building a dam, and erecting a pumping station that forces the water through several miles of pipe line from the artificial lake to the mine. Other necessary construction included the tipple, an office and commissary, a club house, and 80 dwellings.

Exact figures as to the number of men required to produce 2,500 tons per day at a strip mine such as the one described are not available because up to the present many of the employees have been spending all or part of their time on construction work. A careful estimate would place this number at 75. This includes tipple men, office help and all other persons actually engaged in production, preparation and shipping of coal. This means an average of 33 tons per man.

Fig. 5—The "Business End" of the Stripper

A 6-cu.yd. bucket is neither toy nor feather weight. The operating crew consented to forego the joys of their dinner pails long enough to get into this picture in order to show the relative size of the dipper. If the overburden were shot before stripping an 8-cu.yd. bucket could be used on this machine.

While it is generally conceded that coal can be produced at a lower cost by stripping than by underground mining, sight should not be lost of the large investment

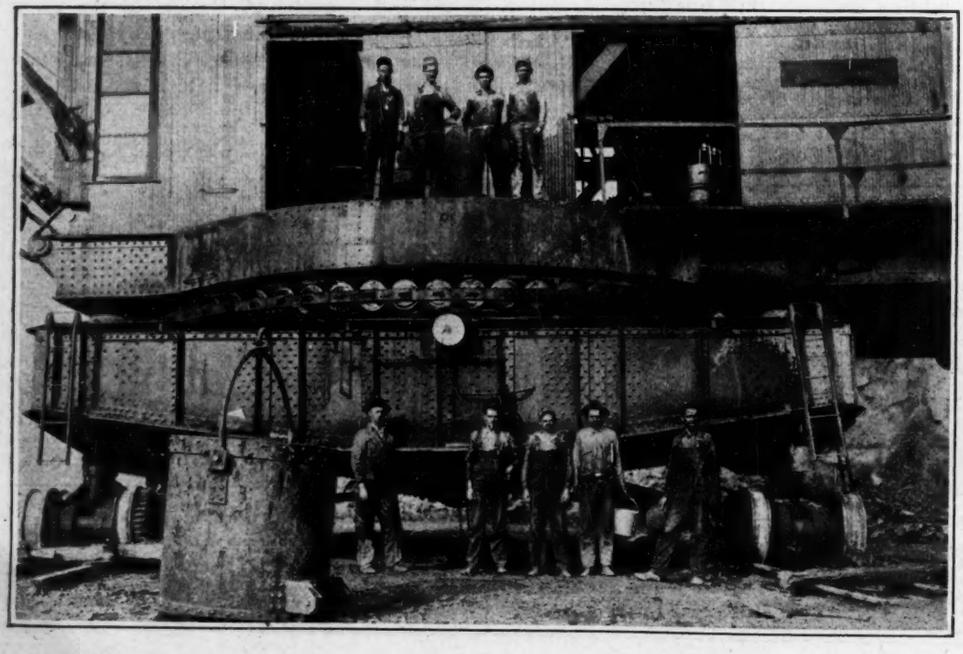


FIG. 4

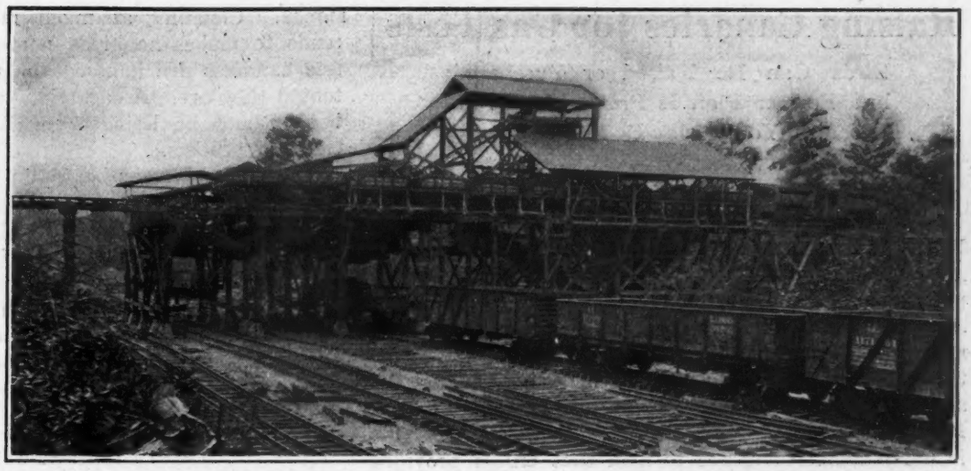
The Underframe

Four trucks support the shovel. Each truck has four double-flanged driving wheels carried in a frame that acts against the plunger of a hydraulic jack. Interconnection between the four jacks makes leveling of the deck frame rapid and easy. The track over which the shovel moves consists of 6-ft. lengths of 120-lb. rails laid directly on the top of the coal without ties, bridles, anti-spreaders or other supporting or holding devices.

FIG. 6

The Preparator

In the early stages of the coal stripping art the product of open pits acquired a bad reputation. Therefore it behooves present-day operators to exercise special care in their preparation. This 2,500-ton four-track tipple is equipped with screening equipment and picking tables assuring careful preparation of the mine product.



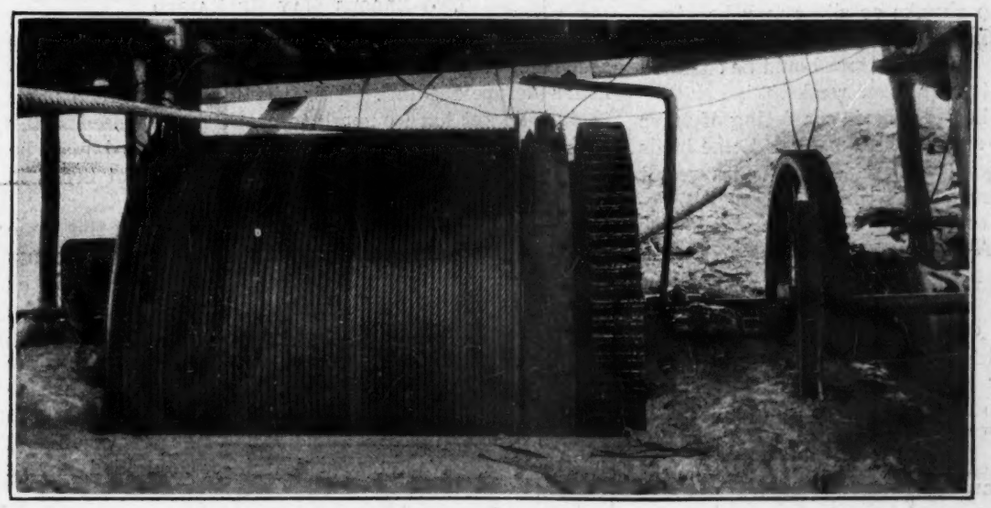
necessary at a modern strip mine. One large revolving stripper, alone, costs approximately $100,000, while the loaders represent a proportionately smaller outlay. Such a plant as that operated by the Dempster Brothers involves a capital charge running up to several hundred thousand dollars.

Stay Out of Abandoned Mines, Bureau Warns Public

Warning against entering any place where the air does not circulate unless one is first assured that it contains enough oxygen to support life, is given by Dr. Thomas T. Read, safety service director of the Bureau of Mines, Department of Commerce, in commenting on the recent death of three persons who entered a well near Rockwood, Md., to make repairs to the piping. Wells, abandoned mines, and other confined spaces where the air does not circulate may be filled with black damp, and the incautious person who ventures into them may be asphyxiated. Black damp is a miner's term for air that has become depleted of its oxygen and consists mainly of nitrogen and carbon dioxide. It is not poisonous, but, being heavier than ordinary air, it lies in a confined space like so much water and a person who goes into it is as effectually cut off from the life-supporting oxygen as if he had gone under water. Unless immediately rescued, he will die as quickly as he would by drowning.

Such accidents are much more common than is generally supposed, Dr. Read continues. Not long ago, one of two men who were strolling near Summerville, Ala., walked a few yards into the slope of an abandoned mine. His companion saw him fall and, instead of immediately trying to rescue him, ran to a nearby house for help. By the time help was obtained the man was dead. Last autumn a boy delivering bread for a bakery stopped at an abandoned mine, near a highway between Culbertson and Froid, Mont., and climbed down the ladderway. He was overcome by black damp. Another boy who tried to rescue him was also overcome, and by the time help reached them both were dead. Many other similar cases might be cited.

Such deaths could be avoided if people would not enter abandoned mines, wells, and such places unless they have some definite duty to perform there, it is pointed out. If it is necessary to enter a place of this description, it is easy to test for the presence of black damp by lowering a lantern to the point at which it is desired to go. If the lantern goes out, black damp is present and should be removed before entering. In the case of a well an opened umbrella can be used to bail it out, like bailing water out in a bucket, or a current of air may be set up by any convenient means. But no one should enter until the lantern burns without flickering, after which it will be safe.



Outside Rope Hoist

In many cases large haulage-rope systems around the mines accomplish results unattainable by other means. Another advantage lies in the fact that the hoist motor is stationary and the electric or steam control is simple and rugged. In gaseous mines the hoist and motor may be located outside and the coal may be hauled by ropes operating through boreholes.

Raising Canaries for Gas Tests

Birds Can Be Raised or Purchased but Former Plan Is Preferable—Two Broods of Young May Be Reared Yearly

BY FRANK H. KNEELAND
Associate Editor, *Coal Age*, New York, N. Y.

FOR many years past canaries have been almost universally employed in the mines in testing for the presence of carbon monoxide (CO) or white damp. Mice have been similarly used but to a far less extent, not only because they appear to be less sensitive to this deadly gas, but also because their signs of distress are less quickly recognized than are those of a bird. Birds sit on perches and when overcome fall off. This is unmistakable evidence to man that unless provided with a gas mask he is in danger.

In order to have always on hand a number of canaries ready for any emergency several coal companies raise birds of their own. Doubtless many others would follow the same procedure rather than buy birds when needed if only the art of successfully rearing the young were better understood. The following is written largely from notes given by a man who for years has had charge of the canaries as well as the safety apparatus and equipment of a large coal company.

It is preferable but not absolutely necessary to keep canaries at some point near that where the breathing apparatus is stored. In all probability both birds and helmets if ever needed at all will be needed simultaneously. For this reason they should not be far separated. The building in which the birds are kept should be both sunny and well ventilated but its temperature should never be allowed to fall below the freezing point.

OVERFEEDING SHOULD BE AVOIDED

A full grown canary, like a dog or a man, should be fed just a little less than he wants to eat. Fat birds are less satisfactory than those in the best of condition. Most canaries eat about a teaspoonful of mixed bird seed per day. This can be purchased ready mixed at any pet store as well as at many feed stores. Birds should be fed once and watered twice daily.

In addition to their allowance of seed or dry food they should be given all the green stuff—lettuce, chickweed, spinach and the like—that they will eat. If this is not available, as may be the case during the winter, apples or pears cut into chunks or slices may be given in its stead. Cuttle-fish bone and sand should be kept in the cages at all times but the latter should be changed periodically, say every two or three weeks.

Canaries also should be fed a tonic consisting of anise seed, dried blood, meat scraps and the like. Some birds will eat such a tonic with moderation and as a result can have it before them all the time. Others will devour it to excess and consequently should be fed with it only periodically. A tonic of the kind above mentioned may be purchased ready prepared being known as "bird manna."

A shallow basin or dish of water should either be kept in the cage at all times or be introduced at regular intervals, say once a day. Apparently some birds do not care to wash themselves while others delight in it, habitually bathing several times a day if given the opportunity.

Cages should be thoroughly cleaned at least once a month. Cleaning at much more frequent intervals tends to make the birds nervous or "skittish." The less canaries are handled the more satisfied and contented they are. A cage that can be detached from its bottom and be lifted from it greatly simplifies the cleaning process.

The mating season begins in the latter part of March or early in April. Two to three weeks before birds are to be mated their cages should be hung close together or the birds should be placed in a double cage with a partition between them. They should be thus hung for two or three weeks before being put together. Unlike the common barnyard fowl the canary is a monogamist, that is, he will tolerate only one mate at a time. To put a male bird into a cage with two or more females is certain to cause trouble.

FRUIT STRAINER USED FOR NEST

About the first of April birds that have become acquainted with each other by occupying adjacent cages as above outlined, may be placed in the same cage. Almost immediately it is necessary to prepare a nest. An ordinary metal gauze fruit strainer answers the purpose excellently. This should be padded with cotton and covered with some hard-surfaced cloth such as canvas. Any soft fabric will cause trouble by catching the birds' claws.

No matter how carefully such a nest may be prepared the birds will try to improve upon it by lining it with material of their own choosing. They prefer something fibrous and in order to supply them with the necessary material it is well to place within the cage a small piece of untwisted rope or a little coarse horsehair.

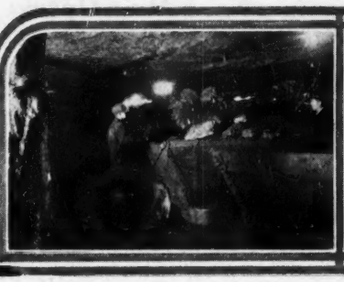
Ordinarily four or five eggs will be laid before the female begins setting. As soon as the hen starts to set the male should be removed but hung in a cage close at hand so that each bird can see the other. The eggs will hatch in from thirteen to fourteen days after the last one has been laid.

As soon as the young birds are hatched ¼ of a hard boiled egg mashed fine and containing both white and yolk should be placed within the cage in a separate dish from that containing food for the adult bird. This ration should be continued until after the young birds start eating for themselves. The mother should be separated from the brood as soon as the young birds have learned to eat which will be in about four to five weeks.

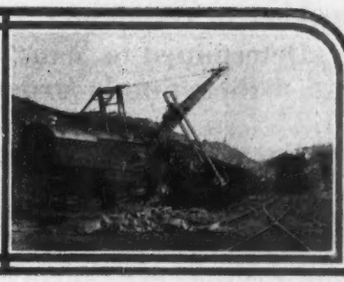
TWO BROODS MAY BE RAISED

For the young birds when they begin eating, the bird seed should be soaked in cold water for two or three hours before feeding. This should be continued until their bills get hard enough to crack the dry seed, after which it is not necessary. The mother bird may be bred a second time immediately after the first brood is taken away.

In breeding, the mating of two birds from the same brood or from different broods from the same parents should be carefully avoided as this degenerates the stock. As singers male canaries far excel the females, but so far as sensitiveness to carbon monoxide is concerned there is no noticeable difference between the sexes. A light-colored bird, however, is more sensitive to gas than a dark one. A dark-colored bird has been known to survive, without apparent ill effect or injury, a gas mixture that killed a light-colored bird almost instantly.



News Of the Industry



Effort to Call Out Non-Union Men In West Virginia Will Fizzle, Say Operators; Summonses for Lewis

While considerable comment is heard in northern West Virginia over the proposed call extended to the non-union coal miners to strike and join the union on Sept. 25, and the visit of John L. Lewis, international president, the following day, coal operators generally do not expect much of a strike. The United Mine Workers, however, is holding a series of mass meetings in various sections of the field to renew interest in the organization and talk strike activities.

Meetings were held recently at Monongah, Rivesville, Lowsville, Grant Town, Kilarm, Watson, Kingmont, Farmington, Dakota, Barnesville, Ida May, Enterprise and other towns.

In commenting on the proposed strike Van A. Bittner, international representative, said: "The response to the strike call which will become effective on Sept. 25, 1925, will be greater than that of April 1 and, from reports coming in from our field workers and the men in various non-union mines, we are almost certain to get a 100 per cent response. The coal companies that are operating non-union mines and using the so-called American plan as a smoke screen realize that the strike will be very effective and, as noted in these non-union coal companies' newspaper statements, they are attacking the United Mine Workers in a most vicious manner.

"Invitations have been sent to all district presidents to have delegations attend the demonstration in Fairmont on Sept. 26 and every district under the jurisdiction of the United Mine Workers will have delegations present at the demonstration.

"A written permit to hold a parade in Fairmont on Sept. 26 was granted the United Mine Workers by Mayor Thomas F. Buckley. It is expected that at least 30,000 people will take part in the parade and at least 10 bands will furnish the music."

Coal operators predict that the new strike will fizzle out like the one on April 1. A reaction will then set in, they say, which will cause the striking miners to sour on the union and return to work. The backbone of the union in the region at present consists of foreigners and it is predicted that many of these radicals will never again be given employment by coal operators in this field.

Philip Murray, international vice-president, and Thomas Kennedy, international secretary and treasurer, will take part in the demonstration of Sept. 26.

A second attempt was made to burn down the tipple of Eureka mine of the Bertha-Consumers Co., at Maidsville, near Morgantown, on Sept. 15. A ball of lighted oil-soaked waste was tossed into the plant by two men, who made their escape, according to the night watchman, who extinguished the blaze.

In the first four days of last week the non-union mines loaded 6,300 cars of coal compared to 970 cars loaded by union mines. Coal production eased up somewhat last week due to the late placement of empty coal cars on Sept. 24 on the Monongah Division, B. & O., the first for a long time.

According to reports received from Morgantown during the latter part of last week if John L. Lewis comes to Fairmont on Saturday a series of summonses will be served upon the union chief on injunctions issued against him and other union officials by the Monongalia, Harrison and Marion Circuit courts. The Continental Coal Co., the Chaplain Collieries Co., the Brady-Warner Coal Corporation and the Shriver Coal Co. are among the companies that have obtained injunctions.

"Yellow Dog" Is Now a "Wienie"

While injunctions don't permit miners to use the term "yellow dog," the union pickets have adopted a substitute in the word "wienie," the common name for frankfurter. The use of this term recently caused a disturbance for which a non-union miner employed at the Dawson Coal Co., at Lyon, was arrested and fined $20.

The Chesapeake mine of the Fairmont-Chicago Coal Co., at Barrackville, will reopen on a non-union basis this week. It formerly worked non-union, but closed down six weeks ago.

The Consolidation Coal Co. will resume operation at Baxter mine this week on an open shop basis, it is reported. This mine was closed down for some time.

The Kelly Creek Collieries Co., in southern West Virginia, has notified the members of the United Mine Workers that they may remain in the company houses at Ward, after the company had sued for the property. The union was told not to erect barracks and it is believed that the company will soon effect a settlement, it is reported. The company is connected with the J. A. Paisley interests.

Fake Wage-Advance Notices Posted at Connellsville

The Connellsville coke region was amazed last week by the surreptitious posting of notices at independent operations that the Frick scale would be restored at those plants on Sept. 21. The authenticity of the notices was promptly repudiated by the operators at whose plants they appeared. The posting was generally considered the work of union sympathizers trying to stir up discontent in the region, which has been one of the question marks in the labor situation since the unexpected walkout in 1922.

Late last year the independent operators raised their wage scales to meet those paid by the H. C. Frick Coke Co. The business that developed, however, would not support the advances and wages were again reduced. At the present time there is said to be little chance that there will be any upward revision.

Virginian Denied Injunction

The injunction sought by the Virginian Ry. to restrain the Interstate Commerce Commission from applying through Western freight rates on carload shipments by way of the Chesapeake & Ohio Ry. was denied Sept. 19 by a special court at Richmond, Va., sitting for the Southern District of West Virginia.

The Virginian desired to establish through Western rates on coal by way of the Norfolk & Western. The court held that the commission had exclusive jurisdiction as to whether the shipments originating on the Virginian should be routed by way of the Chesapeake & Ohio or the Norfolk & Western.

Judge McClintick, of the federal District Court of Southern West Virginia, dissented from the order, which was read by Judge Waddill of the U. S. Circuit Court of Appeals.

The order of the commission was entered on May 19 to become effective June 25. It was sought by West Virginia coal operators and shippers, who claimed the Chesapeake & Ohio route would afford them better facilities.

After the decision Sept. 19, the Virginian sought an interlocutory injunction, pending appeal.

Strikers in Oklahoma Determined to Win; Picketing Is Orderly

A rumor was in circulation Sept. 16 that Henryetta (Okla.) miners were breaking with the union and that a group there had declared that they would abandon the strike instituted by the United Mine Workers. The rumor is emphatically denied by union officials.

Heavy picketing on the part of striking union miners and sympathizers is the only development in the McAlester-Hartshorne-Wilburton coal area, according to Sheriff Will Anderson, who is keeping in touch with the situation. The picketers are meeting both morning and evening now in an effort to get the working miners to join the ranks of the strikers.

The number of men working in the mines remains practically the same, according to reports. In the meantime the state is maintaining its observation in the county to determine if troops should become necessary. So far union men have been peaceful and little disorder has been reported.

Owners of the Rock Island mines are to have a conference in Oklahoma within the next few days, at which time coal contracts for the future will be considered. It is known that a temporary agreement made with Kentucky mine owners is being considered from the standpoint of permanency. It is believed the conference will be of vital interest to the people in this part of the state.

The union miners in the Henryetta field are as determined as ever to win the strike, in the opinion of Andrew Steele, international representative from Missouri, who accuses the operators of bringing non-union workers from Henryetta to the mines in Pittsburg County in an effort to make a showing of men at work in the mines here.

James A. Reed, U. S. Senator from Missouri, and Prince Freeling, former Attorney General of Oklahoma, have been added to the list of legal counsel of the United Mine Workers of Oklahoma and Arkansas to defend the organization and its members in cases growing out of the open-shop wage war going on between the union men and the operators, it has been announced by union officials.

Reed will have charge of the Kansas City proceedings wherein $18,000 belonging to the mine workers has been tied up in the Commerce Trust Co. of Kansas City through injunction proceedings instituted at Fort Smith, Ark. In this case a receiver is asked for the district No. 21 organization of Oklahoma and Arkansas. The Chancery Court there issued an order prohibiting the organization from interfering with its deposit in Kansas City.

© Keystone View Co.

Sanders A. Wertheim

President of Burns Bros., New York's largest coal dealers, as he embarked on the Cunard liner "Berengaria" for London, Paris and Rome, Sept. 16, said that if the hard-coal strike was not settled by Oct. 1 he would arrange for the shipment to this country of 50,000 tons of Welsh coal per month. Mr. Wertheim said the real object of his trip was a pilgrimage to the Holy Year festivities in Rome.

Banning No. 1 Mine Opens; Working Force Growing

The Pittsburgh Coal Co., extending its operations with the 1917 scale as the basic condition, has started another mine in the Pittsburgh district. Much to the surprise of the company officials, the new operation, in so far as labor is concerned, proved an instantaneous success.

The day announcement was made that Banning No. 1, at Van Meter, Pa., two miles from Banning No. 2, had started up on the 1917 scale, there was a flow of men to the mine and some even came to the general offices of the company in Pittsburgh. The first day of operation, Wednesday, Sept. 16, 29 men went to work, but on Thursday there were 105 men at work and this had climbed on Friday to 141 men.

On Saturday 212 tons of coal was produced at Banning No. 1, with 138 men at work. On the same day a new record at Banning No. 2 was made with the production of 800 tons.

Banning No. 1 mine was closed in May of this year, one of the last mines to be held open in the face of the Jacksonville wage scale, which, according to company officials, combined with Southern field competition, made it financial suicide to continue operation.

In opening the second mine, the company carried out the policy adopted on Aug. 20, when the first mine was placed in operation. It was announced at that time that other mines would be started as soon as a sufficient number of former employees at any mine petitioned the company to return to work.

Banning No. 1 mine is located on the Youghiogheny division of the Pittsburgh & Lake Erie R.R. Part of the mine property is in Fayette County and part in Westmoreland County.

The Boston & Maine Ry. has rejected all bids for 5,000,000 tons of railroad fuel for delivery within the next five years and is receiving new bids at the offices in Boston.

Byproduct and Beehive Coke Produced in the United States, 1924

(Exclusive of screenings and breeze)

State	Byproduct: Ovens in Existence	Byproduct: Coal Used (Net Tons)	Byproduct: Coke Produced (Net Tons)	Byproduct: Value of Coke at Ovens	Beehive: Ovens in Existence	Beehive: Coal Used (Net Tons)	Beehive: Coke Produced (Net Tons)	Beehive: Value of Coke at Ovens	Total: Coke Produced (Net Tons)	Total: Value of Coke at Ovens
Alabama	1,196	6,375,171	4,386,372	$16,563,223	6,199	256,240	$154 686	$840,843	4,541,058	$17,404,066
Colorado	120	754,790	523,405	(a)	1,696	330,226	212,115	(a)	735,520	(a)
Georgia	.....	.....	.....	.....	151	14,400	8,081	71,355	8,081	71,355
Illinois	739	3,397,248	2,355,474	20,187,519	.....	.....	.....	.....	2,355,474	20,187,519
Indiana	1,133	5,828,314	4,272,435	30,394,497	.....	.....	.....	.....	4,272,435	30,394,497
Kentucky	108	(b)	(b)	(b)	795	146,794	79,248	455,532	(b)	(b)
Maryland	300	1,103,984	810,118	(a)	.....	.....	.....	.....	810,118	(a)
Massachusetts	400	574,632	397,640	(a)	.....	.....	.....	.....	397,640	(a)
Michigan	420	2,408,925	1,770,547	11,914,028	.....	.....	.....	.....	1,770,547	11,914,028
Minnesota	220	744,567	514,674	4,903,891	.....	.....	.....	.....	514,764	4,903,891
Missouri	64	(b)	(b)	(b)	.....	.....	.....	.....	(b)	(b)
New Jersey	202	1,202,732	869,120	(a)	.....	.....	.....	.....	869,120	(a)
New Mexico	.....	.....	.....	.....	1,030	136,212	83,070	(a)	83,070	(a)
New York	686	2,265,062	1,600,669	11,108,944	.....	.....	.....	.....	1,600,669	11,108,944
Ohio	1,689	8,422,760	5,723,074	31,008,209	205	168,648	109,625	(a)	5,832,699	(a)
Oklahoma	.....	.....	.....	.....	300	.....	.....	.....	.....	.....
Pennsylvania	3,420	12,555,568	8,426,155	34,674,512	36,030	12,989,648	8,501,282	37,893,584	16,927,437	72,568,096
Rhode Island	40	(b)	(b)	(b)	.....	.....	.....	.....	(b)	(b)
Tennessee	24	104,314	75,720	376,328	1,555	249,293	131,755	635,736	207,475	1,012,064
Utah	33	190,035	97,350	(a)	819	268,808	159,744	1,310,929	257,094	(a)
Virginia	.....	.....	.....	.....	3,234	769,990	485,064	2,343,081	485,064	2,343,081
Washington	20	70,968	39,903	283,710	408	49,339	31,712	289,934	71,615	573,644
West Virginia	311	1,484,951	998,914	4,402,186	8,010	534,712	329,655	1,646,452	1,328,569	6,048,638
Wisconsin	288	(b)	(b)	(b)	.....	.....	.....	.....	(b)	(b)
Combined States	.....	1,578,318	1,121,908	9,387,943	.....	.....	.....	.....	1,201,156	9,843,475
Undistributed	.....	.....	.....	20,485,019	.....	.....	.....	2,864,106	.....	55,668,263
	11,413	49,061,339	33,983,568	$195,690,009	60,432	15,914,310	10,286,037	$48,351,552	44,269,605	$244,041,561

(a) Included under "Undistributed." (b) Included under "combined states."
Compiled by U. S. Bureau of Mines.

Politics to Affect Hard Coal Strike, Washington Believes; Tardy Buying Of Substitutes Causes Concern

By Paul Wooton
Washington Correspondent of *Coal Age*

Outwardly the anthracite situation is so calm that the man in the street is forgetting that a strike is in progress. Prices of coal are not rising noticeably. The people throughout most of the country's area have been sweltering and have given little thought to the winter. Absolutely no public pressure has been brought to bear on the situation.

There are indications, however, that something is going on beneath the surface. The belief is growing that this strike is going to turn on political considerations and on political understandings. There is no sign of the issue's having become involved in national politics, but the visits of John L. Lewis to Governor Pinchot—one openly and one privately—indicate that the political leaven is at work. When men who typify controverted questions of public policy, backed by large and determined groups of followers, are engaged in a fight for high federal office, a political development in a single state easily can be forced into the national arena.

Except for the fact that federal agencies dealing with coal are receiving a few more letters than is customary, there is no evidence in Washington that 158,000 men are on strike and that there is a cessation in production of a fuel always heretofore regarded in large areas of the country as essential to life. The position of the administration is becoming increasingly clear. Early news dispatches from Swampscott might have meant anything. Fragmentary replies to questions were interpreted in various ways. The Hearst papers saw in these utterances promises of prompt federal intervention. The conservative press thought they contained assurances that no drastic action would be taken. Later the tone of the Swampscott dispatches became more positive that the administration would not intervene.

Administration Waiting for Public

Now that the President has returned to Washington, no questions as to coal are being answered at the White House. In fact no federal officials are allowing themselves to be quoted on coal. This is believed to be due to the fact that they do not want observations of theirs to create the impression that the federal government is going to step in and save the situation. They want the public to act in its own interest.

It is apparent that federal officials are watching with concern the failure of the public in the anthracite consuming areas to start the buying of substitutes. Production of soft coal declined during the first week of the anthracite strike. The decline is only partly explained by the Labor Day holiday. It is now apparent that the heavier movement of soft coal in August was not due to the purchase of substitutes but to the accumulation of larger reserves by the steam trade.

Prices of bituminous have reacted only slightly to the strike. The average spot price of the week of Sept. 12 was only 15c. a ton higher than that of a year ago. The quarter from which the highest prices have been offered is not New England. It is not from the North Atlantic seaboard, but is from the Middle West, where but little anthracite has been used for some years. Every check that can be made from current statistics indicates that the buying of substitutes has been very limited indeed.

Those who want to see this strike settled within the industry are glad to note that no delegations of governors are arriving in Washington to ask for help in getting coal. They are pleased at the absence of telegrams from Chambers of Commerce, but they wish the public would become aroused to the extent of filing hurry-up orders with their dealers or local fuel committees for the substitutes they will need to carry them through.

Name Subcommittees to Study Mine Bureau Work

As the result of the action at Salt Lake City of Secretary Hoover's advisory committee, representative of the mining industry, subcommittees are engaged in an intensive study of the details of the work of the Bureau of Mines. These subcommittees will report to the full committee late in October at a meeting to be held in Pittsburgh.

By dividing up the work the members of the committee can devote their time to the activities with which they are most familiar. Since it is impractical for the full committee to have frequent meetings, this arrangement provides finished material on which it can act. The subcommittees and the subjects assigned to them are as follows: L. S. Cates and J. F. Callbreath, metallurgy and ore dressing; J. V. W. Reynders, fuel economy; H. Foster Bain and F. P. Hanaway, mining methods; D. M. Folsom, petroleum and natural gas; Mr. Bain, non-metallics; J. G. Bradley and Mr. Hanaway, safety; C. P. White and Mr. Folsom, collection and dissemination of information; Messrs. Bradley and White, economics and statistics; Messrs. Bain and White, service to the government; Messrs. Reynders and White, duplication in activities; Messrs. Cates and Callbreath, consolidation of experiment stations.

The broad scope that the committee's work will cover is indicated further by the decision of the full committee at Salt Lake City to submit recommendations along the following lines:

The advantages and disadvantages of decreasing the number of mining experiment and field stations and concentrating the work at a few centers.

To what extent should the Bureau enter the field of economic studies of the industry?

Should a limit be placed on the amount of the Bureau's funds and the time of its staff which now are absorbed by service to other branches of the government?

How can the pooling and redistribution of technical information be bettered?

How are the "fundamental and underlying problems" of efficiency in the mining industries, on which the Bureau is required by law to do research work, to be delimited? Where should the state or the industry take up the work?

In the safety work is the correct proportion of effort being placed on the work most needed and that most likely to yield results? Is a continuance desirable of the present field work and that on permissibility?

Is it desirable to co-operate with the states in the matter of furnishing technical service to the state mine inspectors?

What safety instructions, demonstrations and educational work should the Bureau conduct?

Should the operation of mine rescue and safety stations be turned over to the states or to the local associations of coal operators?

To Guard Against Duplication

While the preliminary reports made to the committee indicate that there is little duplication of work between the Bureau of Mines and the other bureaus of the Department of Commerce, the committee decided that it is advisable to make a record of the facts in that connection and to suggest methods which will guard against duplication in the future.

Messrs. Bain and White were requested to submit a special recommendation as to the transfer of functions from or to other bureaus of the department.

At the Salt Lake City meeting of the committee testimony was presented on the general work of the Bureau, on non-ferrous metals, on the Salt Lake City and Reno stations, metallurgical work on Arizona copper, explosives, safety, iron ores and treatment.

Illinois Mine Installs Five Coal Loaders

The Troy Coal Co., Troy, Ill., has installed automatic loading machines in its mine. The mine is being operated sixteen hours a day, the miners being paid a flat scale. Five new machines have been placed in service. The men working on the machines are paid $8.54 per day for one class of work and $8.04 for another.

With the men working on a flat scale it is not necessary to weigh the coal at the bottom of the mine. The weight is not taken until the coal is loaded into the railroad cars.

Americans Miss Coal Trade Opportunities in Argentina

Return cargoes do not constitute an indispensable requisite of export trade, in the opinion of H. Foster Bain, who recently completed a study for the Argentine government as to the possibilities of iron and steel making in that republic.

Argentina gets most of its coal from Great Britain. It always has been assumed that the British obtain this business because coal moves in the ships that go out to get wheat. Mr. Bain had occasion to check the import figures covering coal and found that the coal movement was heavier in months when grain was not moving. His inquiry also revealed other instances in which return cargoes are not taken, particularly when they are made up of dissimilar materials.

Mr. Bain thinks Americans could sell more coal in Argentina and other countries if they were to go after the business more persistently. Purchases of British coal are influenced in part by the fact that the railroads and some of the other large consuming industries are British-owned. Their purchasing agents are Britishers with their offices in London. They buy British coal more as a matter of convenience than as a matter of sentiment. If there were no price or other advantage they probably would buy from their own countrymen. The principal objective of a purchasing agent is to make a good showing and the principal objective of a corporation is to produce dividends.

Since American coal can undersell the British product in Argentina under present conditions Mr. Bain thinks agents for American exporters might call upon some of the London purchasing agents of Argentine companies.

There are, of course, other problems to work out. One of them is to teach consumers how to burn American coal to the best advantage. Only one consumer in Argentina uses stokers.

One of the best ways to induce the railroads to burn American coal, Mr. Bain suggests, would be for Americans to get into the transportation game in the southern republic. With a railroad run on American lines to serve as an object lesson, he feels that there would be resort to more American supplies than coal.

Will Move Strikers to Idle Mine Villages

Although the Pittsburgh Coal Co. has served twenty-eight eviction notices on miners at Banning No. 2 mine, eight miles from West Newton, Pa., the company has not evicted any of the men. These men and their families, who owe from two to twenty months rent, will be given the option of being moved to other villages of the company. If it is found necessary to take active eviction steps, sufficient trucks will be provided by the company at its own expense to haul the household goods of each family to a town of its choice where the mine has been closed down because of inability to operate at the wage scale demanded by the leaders of the United Mine Workers. It is understood that many of those served with notices have elected to return to work.

The man who owed the most rent had lived in a company house since December, 1923, without paying a cent. The rent charged is $8.93 a month. Many of the men now working at the Banning mines earn that amount in a single day.

To promote economy, efficiency and unity of direction, the explosives physical testing section, the explosives chemical laboratory, and the liquid oxygen explosives research of the Bureau of Mines, Department of Commerce, will be combined into the explosives section of the Pittsburgh Experiment Station, with G. St. J. Perrott, assistant chief explosives chemist, in charge. Mr. Perrott will give special attention to explosives research and will report to Dr. Charles E. Monroe, chief explosives chemist, through the superintendent of the Pittsburgh Station. Spencer P. Howell, explosives engineer, has been transferred to Pittsburgh to continue work on liquid oxygen and special investigations. J. E. Crawshaw, explosives engineer, will be in charge of physical testing, and C. A. Taylor, associate explosives chemist, will be in charge of chemical testing.

New Byproduct Coke Plant To Open at Troy, N. Y., Soon

The new byproduct coke plant of the Hudson Valley Coke & Products Corporation, located on the Hudson River just south of Troy, N. Y., is nearing completion and will be ready for operation soon. This undertaking represents the association of blast furnace, fuel selling and beehive coke manufacturing interests for the purpose of providing coke for a blast furnace, gas to several municipalities and the general fuel market with the excess coke production.

The corporation operating the plant is owned by the Burden Iron Co., of Troy, M. Tutein, Inc., of Boston, and the Oliver & Snyder Steel Co., which owns three large mines and a total of 1,108 beehive ovens at Redstone Junction, Pa. The Oliver & Snyder Steel Co. expects to furnish all the coal for their byproduct ovens.

James A. Burden, president of the Burden Iron Co., Troy, is chairman of the Hudson Valley Coke & Products Corporation; the president is Harry Oliver, who is also president of the Oliver & Snyder Steel Co., of Pittsburgh, while John W. Doty, president of the Foundation Company, is vice-president.

The first unit of the Troy plant will consist of a battery of 55 ovens, capable of turning out approximately 500 tons of coke and 17,000,000 cu.ft. of gas every 24 hours. The entire plant, including the blast furnaces, gas holders and apparatus for recovering and treating various byproducts, such as coal tar, ammonia sulphate and benzol, will cover some 50 acres of ground and will cost around $6,000,000. Two additional units of 55 ovens each may be installed later on, so that the coke-making capacity may ultimately be 1,500 tons a day.

Designed by the Foundation Oven Corporation, of New York, this will be the first installation of the so-called American type of oven in the United States. This type of oven has been in use for four years in British Columbia, however.

Consumption of Coal and Oil By Utilities Up in July

Public utility power plants in the United States consumed 3,170,582 net tons of coal in July, according to a report by the U. S. Geological Survey. This compares with 3,089,578 tons in June, as shown by revised figures. Fuel oil consumption by utilities in July totaled 852,464 barrels, compared with 790,812 barrels in June as shown by revised figures.

The average daily production of electricity by public-utility power plants in July was 172,200,000 kw.hr., less than one per cent lower than the average daily output for June.

Since the daily rates of production of electricity for these two months were practically the same it is evident that the low average daily rate for May in comparison with April and June probably was due to the output for May being reduced by the five Sundays and the holiday included in the month.

Average Value of Anthracite Shipped; Local Sales; Colliery Fuel, And Total Output, by Regions, 1922-1924

(Per Gross Ton)

Year and Region	Shipments: Domestic	Shipments: Pea	Shipments: Steam	Shipments: Total	Local Sales	Colliery Fuel	Total Output
1922							
Lehigh	$8.03	$5.93	$2.70	$6.05	$3.97	$2.34	$5.56
Schuylkill	8.25	6.04	2.44	5.78	4.44	0.78	4.98
Wyoming	7.87	5.81	2.79	6.52	5.78	1.69	6.02
Sullivan County	9.07	6.97	2.42	5.22	6.18	2.00	4.84
	$8.00	$5.92	$2.63	$6.21	$5.07	$1.38	$5.61
1923							
Lehigh	8.62	6.34	2.57	6.36	3.80	1.77	5.84
Schuylkill	8.87	6.34	2.47	6.31	3.87	0.72	5.63
Wyoming	8.29	5.95	2.62	6.81	5.92	1.43	6.40
Sullivan County	9.29	7.14	2.39	6.81	6.56	2.60	6.73
	$8.48	$6.17	$2.55	$6.70	$4.80	$1.2[illegible]	$6.08
1924							
Lehigh	8.95	5.91	2.22	6.54	4.53	1.68	6.03
Schuylkill	8.99	5.67	1.99	6.33	4.05	0.45	5.57
Wyoming	8.35	5.44	2.38	6.81	6.14	0.97	6.36
Sullivan County	8.65	5.89	2.03	5.11	7.15	1.98	5.10
	$8.58	$5.59	$2.21	$6.63	$5.15	$0.87	$6.08

Compiled by U. S. Bureau of Mines.

Plan Merger of Many Mines In Illinois

A consolidation of many important coal mines in the Fifth and Ninth districts of Illinois is planned by the Bell & Zoller Coal Co., of Chicago, Ill., with the backing of Chicago, Baltimore, Philadelphia and Boston bankers. The proposed company would have $35,000,000 capital.

Homer F. McDonald, of the Meteor Coal Co., and H. Beddoe, of the Bresse-Trenton Mining Co., are taking options for the Chicago concern and are attempting to line up all the important coal properties in the district within a radius of 100 miles of East St. Louis, Ill.

The options are being taken with the understanding they are transferable to the Bell & Zoller company and call for cash payment at the time of the transfer. They expire Nov. 1.

It is reported that the merger proposition has been put to about 85 per cent of the mine owners and that a number have agreed to sell.

Companies approached are said to include: West Virginia Coal Co. and subsidiaries, Lumaghi Coal Co., Kolb Coal Co., Bresse-Trenton Mining Co., Columbia Coal Co., St. Louis & O'Fallon Coal Co., Miller Coal & Coke Co., Donk Bros. Coal & Coke Co., and Southern Coal, Coke & Mining Co.

It is reported that the Mount Olive & Staunton Coal Co. and the New Staunton Coal Co. have granted no options and probably will not be approached. W. J. Jenkins, president of the Consolidated Coal Co. of St. Louis, also has stated that no options have been given by his company.

River Coal Movement Increasing Rapidly

Despite the fact that the Monongahela long has enjoyed the distinction of being the world's busiest waterway, the density of traffic on this stream is increasing at such a rate that it is difficult for improvements to keep pace with the demands of commerce. General Edgar Jadwin, acting chief of engineers, has just returned from a trip over the river during which he inspected some of the engineering works on the stream. The availability of the 56 x 720-ft. Elizabeth locks, which will accommodate at one time a towboat and six barges, the standard fleet on the Monongahela, is proving a great asset to those using the river.

General Jadwin is impressed with the additional tonnage which must be handled by water because of the improvement at the Alice coal mine of the United States Steel Corporation, which he visited with the 400 other guests of the corporation on its annual "inspection" day. That property now has in operation a belt conveyor having a capacity of 10,000 tons daily. The other steel companies also are augmenting their output of waterborne coal.

General Jadwin points out that the intensive use of waterways in the Pittsburgh area is not confined to the Monongahela. The tonnage on the Allegheny has doubled in ten years and now exceeds 5,000,000 tons. The practical completion of the system of dams, with 110 x 600-ft. locks, on the Cincinnati-Pittsburgh sector of the Ohio means, General Jadwin believes, the extension of the zone of dense traffic to include that 470-mile stretch of improved waterway. While the traffic on the Ohio will be of a different character from that in the Pittsburgh area, it promises to grow rapidly into a very large tonnage.

Heating with Oil Costly

On an average, it costs approximately one-third more to heat a house with oil than with bituminous coal, according to statements recently made by a fuel engineer of high standing. This estimate is based on the use of a high-grade oil burner, but if figures are based on use of a low-grade oil burner the percentage of increase becomes much higher. The cost of the mechanical equipment and the fact that it is relatively short-lived make it necessary to stress the factors of interest and amortization, which establishes the oil burner as a luxury.

The cost of living index number of the National Industrial Conference Board as of July 15, 1925, according to a survey just completed, is found to be approximately 2 per cent higher than that of March 15, 1925. Slightly more than half of this increase occurred between June 15 and July 15, 1925. Between March and July, 1925, average increases in the cost of food were 6 per cent; in clothing 1.1 per cent and in light, 0.7 per cent. Average shelter and fuel prices decreased 1.7 per cent and 3.3 per cent respectively; average sundries prices did not change in this period. Between July, 1920, when the peak of the rise in the cost of living since 1914 was reached, and July, 1925, the cost of living decreased 17.5 per cent. The increase in the cost of living since 1914 was 68.7 per cent.

Want Big Muddy Improved For Coal Traffic

Possibilities of rendering the Big Muddy River navigable, which coal men declare would materially lower the price of Illinois coal and bring the Illinois mines back into prominence, will be discussed at a public meeting Oct. 1 in the U. S. Engineer's office in the Federal Building, St. Louis, Mo. The Big Muddy traverses Jackson, Franklin and the northwest corner of Williamson County, Illinois.

"Improvement of the river to 15 or 20 miles above Murphysboro would tap a barge traffic of 50,000 tons a day," declared E. J. Wallace of the Wallace Coal Co., St. Louis. "If the channel was built only to Murphysboro, some 30 miles above the Mississippi, the tonnage would be cut in half, but even that would give employment to thousands of miners. Only a third of the Illinois mines are in operation now. They have been steadily losing ground because of high freight rates—$1.37 a ton from Franklin County to St. Louis—and the cost of union labor."

The government is making its preliminary examination of the project to determine whether the traffic available and general topography of the river warrant a survey. The survey, if it is authorized by Congress, will go into every detail of necessary improvement and possible development of traffic and will be submitted to Congress for final action.

Exercise of Reading Rights Extended Six Months

The U. S. District Court in Philadelphia on Sept. 21 granted an extension of six months for the exercise of the rights of the Reading Company in the certificates of interest for Reading Coal shares.

Application for the extension was made to the court by William Clark Mason, counsel for the Reading Company, on the ground that to date only about 45 per cent of the rights issued by the Reading Company to its stockholders had been exercised.

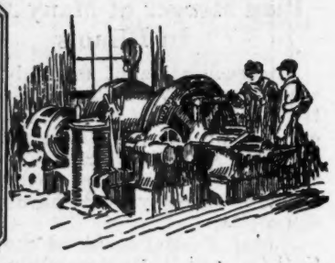
Men Employed and Days Worked in Anthracite Region in 1924

Region	Average Number of Men Employed: Surface	Underground: Miners, Etc.	Underground: Other	Underground: Total Underground	Total	Average Number Days Worked
Lehigh:						
Breaker product	6,297	7,913	6,077	13,990	20,287	273
Washery product	34	....	....	....	34	73
Dredge product	10	....	....	....	10	127
	6,341	7,913	6,077	13,990	20,331	273
Schuylkill:						
Breaker product	14,824	22,388	12,406	34,794	49,618	270
Washery 0roduct	535	.....	.....	.....	535	141
Dredge product	303	.....	.....	.....	303	188
	15,662	22,388	12,406	34,794	50,456	268
Wyoming:						
Breaker product	17,974	45,497	24,586	70,083	88,057	280
Washery product	445	.....	.....	.....	445	166
Dredge product	2	.....	.....	.....	2	200
	18,421	45,497	24,586	70,083	88,504	280
Sullivan County:						
Breaker product	222	237	259	496	718	200
Total breaker product	a39,317	76,035	43,328	119,363	158,680	275
Total washery product	1,014	.....	.....	.....	1,014	141
Total dredge product	315	.....	.....	.....	315	186
Grand total	40,646	76,035	43,328	119,363	160,009	274

a Includes a comparatively small number of washery employees who could not be separated from breaker employees.

Compiled by U. S. Bureau of Mines.

Practical Pointers For Electrical And Mechanical Men



Air Blast Through Canvas Tubing Cools Tube Driller

Drilling boiler tubes has never been advertised as a "soft job." At the Earlington plant of the West Kentucky Coal Co., doing this work formerly was considered as out of the question during hot summer months. The grating or open-steel platform on which the operator must stand to drill the tubes of the 552-hp. boilers is close to the roof of the boiler house, and is in the 5-ft. space between drum ends of adjacent boilers. The heat radiated from the drum ends of the "live" boiler combined with the heat of the air in the top of the boiler house made it impossible for a man to stay on the platform any length of time.

But in a well regulated plant the heat of summer must not interfere with the efficiency of the boilers, so during this last summer drilling of tubes has been done whenever necessary, and accomplished with perhaps as much comfort as during cold weather. This was made possible by use of the equipment illustrated in Figs. 1 and 2. It consists of an asbestos-covered shield to protect the operator from the direct radiation from the drums of the "live" boiler, and of a motor-driven blower with canvas tubing for delivering a blast of cool air up through the grating on which he stands.

The wood-frame asbestos-covered shield can be seen at the right in Fig. 1. The size of this shield is approximately 5x5 ft. When drilling the tubes of the boiler at the left, the operator stands just back of the large vertical steam pipe in the foreground.

The blower, with canvas tubing leading up to the platform, is shown in Fig. 2. This ventilating unit is made up of a 2-hp., 1,750-r.p.m. motor direct connected to an 18-in. straight-flow fan. It is located on the boiler room floor directly below the operator's platform. The upper end of the tubing is tied to the underside of the open-steel floor of the platform. The air delivered by the blower is practically at the temperature of the outside air, for the reason that the unit is not more than 20 ft. from a large open door, and the incoming air has little chance to become heated before entering the suction.

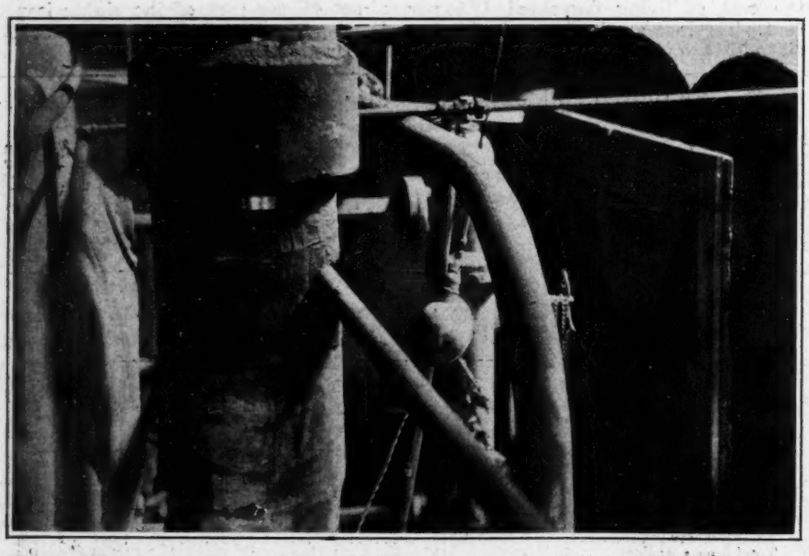


Fig. 1—Between Boilers and Close to the Roof Is a Hot Place

The ends of the drums of the "live" boiler are not over 4 ft. from where the operator must stand when drilling tubes. To give protection from the direct radiation, the wood-frame asbestos-covered shield at the right is used. This, in combination with the blower, Fig. 2, makes drilling of tubes a bearable job in the summer time.

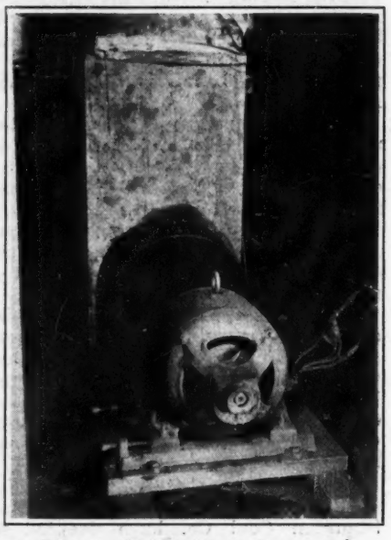


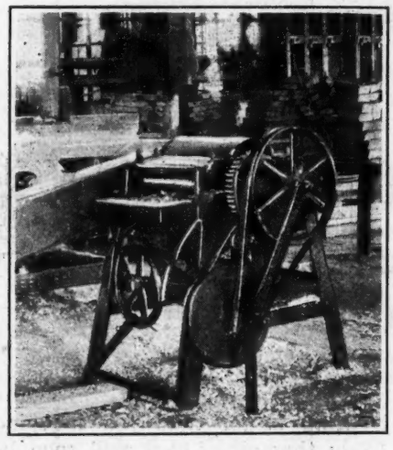
Fig. 2—Drives Cool Air up to the Tube

The upper end of the canvas tube leading from this 18-in. fan is tied to the under side of the grating on which the driller stands.

Handy Home-Made Planer Is Valuable in Mine Shop

In most mine shops, the wood planer is a machine tool which, more likely than not, is conspicuous only by its absence, although, in such places it could be used to excellent advantage.

The accompanying illustration shows such a machine built up by the shop force in the No. 4 shop of the Kingston Coal Co., Kingston, Pa. The frame of this machine is made of structural shapes chiefly angles, while the gears, rollers, springs, etc., were picked up as odds and ends around the plant, only the planer knives having to be purchased specially. As may be seen in the illustration, the driving belt is completely incased in a sheet-iron box, thus being entirely safe. The driving gears of this machine, which is about 18 in. wide, or will take a board of that width, are belted and



Not Fazed by Long Use

This machine was built in the shop where it is now used. It performs its work effectively and looks as if it would last almost indefinitely. Its chief drawback is the fact that no means have been provided for removing the shavings by air blast. This, however, is a minor disadvantage. The belt is inclosed for safety.

back-geared from the main shaft.

Although this machine perhaps lacks many of the refinements found in factory-built planers, it nevertheless is extremely handy and does much work every day. It has been in use for about twelve years and judging by its present condition it appears to be good for indefinite further use.

Barrier Permits Men to Pass But Seals Off Gas

Mines usually are separated by barrier pillars. As a general rule no passage of any kind is made in such separators or they cease to be barriers. In many instances, however, it would be highly advantageous if an opening could be had through the barrier from one mine to another that would permit the passage of men yet prevent the movement of gas or air. The accompanying illustration shows how the Tennessee Coal, Iron & R.R. Co. has solved this problem and secured a seal between its Edgewater and Bay View mines that permits the passage of men.

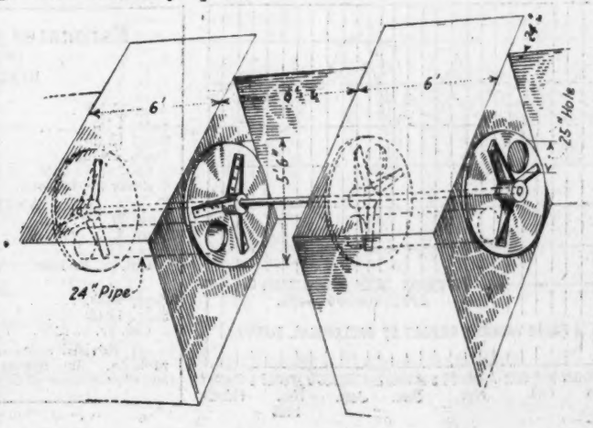
In the passage or break-through that is driven through the pillar separating the two mines, two 6-ft. reinforced concrete stoppings have been constructed. Each of these contains a piece of 24-in. steel pipe extending entirely through it from side to side. These two pipe openings are in line with each other. Through both concrete blocks also, extends a heavy shaft that turns in bushings embedded in the concrete. To this shaft four spiders, to each of which is attached a steel disk 1 in. thick and 5 ft., 6 in. in diameter, are keyed.

Each of these disks has a 25-in. circular opening cut through it, which, when the disk and shaft are revolved, comes in line with the 24-in. pipe embedded in the concrete stopping. The disks are fastened to the shaft in pairs. Thus the shaft can be turned so that the holes in one pair of disks will unmask the 24-in. pipe through the concrete block upon either side of which the disks are located. When this occurs, however, the openings in the other pair of disks, being at 180 deg. from those in the first pair, effectively close the opening in the second concrete stopping.

When a man wishes to pass through this seal he first rotates the disk nearest him until the opening in it unmasks the cast-in pipe leading through the concrete. He then crawls through this pipe into the space between the two blocks of concrete. Here he revolves the disk adjacent to the next concrete wall until the hole in it comes opposite its pipe. This closes the opening in the first block. Thus, regardless of the position of the disks the opening between the two mines is always closed. Men may go through the barrier at will but appreciable quantities of air, gas or water can never pass.

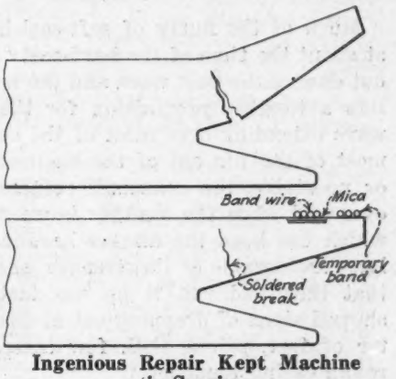
Men May Pass but Gas Cannot

Two heavy concrete blocks bar the passage through the break-through between Bay View and Edgewater mines. Into each of these a 24-in. pipe is cast. Its ends, however, are protected by steel plate disks, each of which is fitted with a 25-in. opening. One pipe is always covered, preventing the passage of air or gas.



Quick Repair Keeps Mine Going

At one of our mines a 200-kw. rotary converter, about twelve years old and with a thin commutator, threw out one of its bars. The bar broke nearly through as shown in the accompanying sketch, and was badly bent by striking the brush holders before the machine could be stopped. To keep the machine in service while waiting for a new commutator, we straightened the bar and soldered it together at the break.



Ingenious Repair Kept Machine in Service

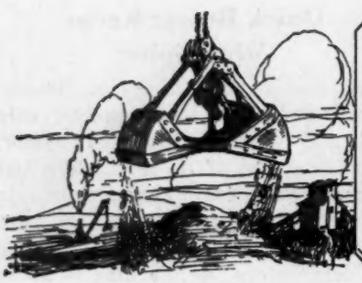
The broken commutator bar shown in the upper sketch was straightened and soldered before being pushed back in position. A temporary banding wire set in a groove cut in the commutator holds it in place.

We then forced it down in place and held it there with a band of binding wire until a more permanent repair could be made. This was done by turning a groove in the commutator about ¾-in. wide and 1/32 in. deep close to the end of the bars and outside of the path of the brushes. Four turns of band wire under heavy tension were then wound in this groove, being insulated from the bars by means of about .025 in. of mica. The commutator was then trued and the machine put back on the line. It is now running and appears to be as good as ever.

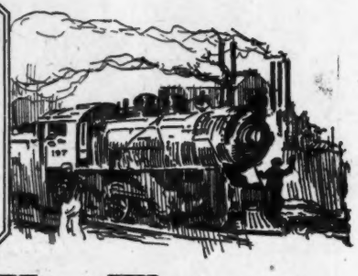
R. R. SCHELLENGER,
Electrical Engineer.

Adding Castor Oil Makes Shellac Flexible

For most purposes insulating varnish should have the property of remaining flexible. Shellac becomes brittle when dry. This is one of the reasons why it has been replaced to a great extent, in the repair shops, by special varnishes. In an emergency when special varnishes are not available, a flexible insulating liquid can be made by mixing castor oil with prepared shellac. Adding 10 to 15 per cent of the oil will make the shellac remain flexible after drying.



Production And the Market



Bituminous Coal Trade Sags in Hot Wave; Hard Coal Quiet Despite Strike

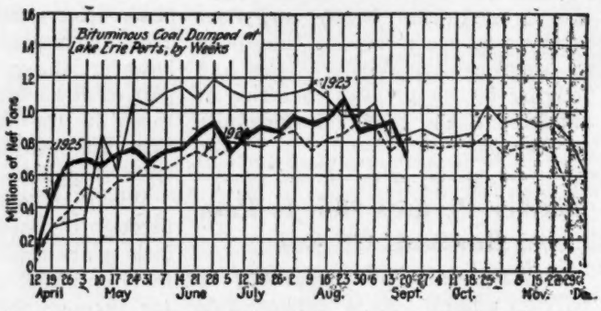
Much of the flurry of soft-coal buying which began at about the time of the hard-coal "suspension" petered out during the past week and the market has developed into a weather proposition for the time being, a hot wave extending over most of the country having taken most of the life out of the business. As usual, strike or no strike, the consumer refuses to get worked up over coal when the weather is warm. Even smokeless, which has been the market headliner right along, has lost considerable of its strength, shippers having found that they had run it up too fast when the bottom showed signs of dropping out at Cincinnati. As a matter of fact, prices, with few exceptions, show an all-round easing tendency.

The Midwest trade has been particularly hard hit, practically all grades having slowed up in Illinois, with a consequent slight curtailment of working time. Prepared sizes are somewhat weaker in Kentucky with a slight downward tendency in price. Business at the head of the lakes shows sustained improvement; shipments off the docks are increasing as demand for both steam and domestic gains, and prices show a steadily stiffening trend. Coal is moving better in Colorado, Utah and the Southwest, though labor unrest in Oklahoma is hampering output in that field.

Trade in Eastern markets is fairly steady with a tendency to gradual improvement. In New England and Ohio, however, a slight easing up is in evidence. Thus far, the increase in buying that was expected as a result of the anthracite suspension has not developed in accordance with advance reports. The attempt to call out non-union miners in West Virginia is not expected to have much effect.

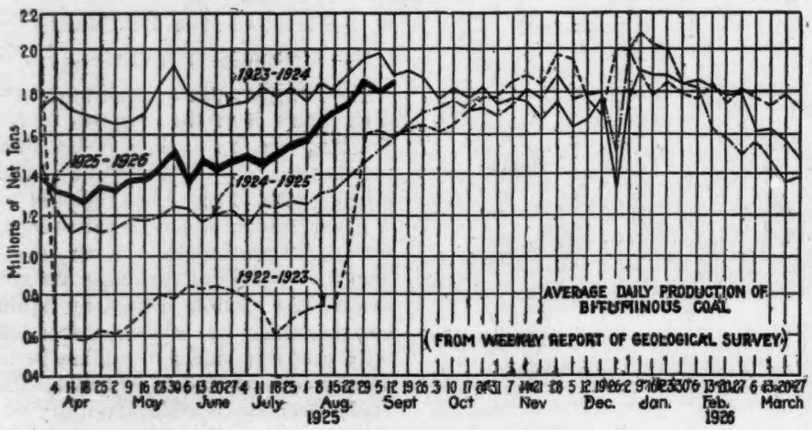
Both sides are sitting tight as the hard-coal strike goes into its fourth week, and as summer weather lingers anthracite consumers show no disposition to become excited. Nothing larger than pea is being shipped and it is likely that all of that will soon be ordered. Buckwheat is still plentiful. Retailers are well stocked with domestic sizes, however, and with careful handling will be able to take care of reasonable needs for several weeks yet. Substitutes are not in much demand as yet.

Output of bituminous coal during the week ended Sept. 12 is estimated by the Geological Survey at 9,993,000 net tons, loadings on Labor Day being 40 per cent of a normal workday. This compares with 10,826,000 tons in the preceding week, as shown by revised figures. Five thousand tons of anthracite was shipped from dredges during the week ended Sept. 12 compared with 432,000 net tons produced during the preceding week, when the miners quit work.



Coal Age Index of spot prices of bituminous coal on Sept. 21 stood at 185, the corresponding price being $2.24.

Dumpings at Lake Erie ports during the week ended Sept. 20, according to the Ore & Coal Exchange, were: Cargo, 708,393 net tons; steamship fuel, 45,729 tons—a total of 754,122 net tons, compared with 933,036 tons in the preceding week. Hampton Roads dumpings during the week ended Sept. 17 totaled 332,097 net tons.



Estimates of Production

(Net Tons)

	1924	1925
BITUMINOUS		
Aug. 29 (a)	9,006,000	11,133,000
Sept. 5 (a)	8,209,000	10,826,000
Sept. 12 (b)	9,835,000	9,993,000
Daily average	1,639,000	1,850,000
Cal. yr. to date	(c) 318,413,000	338,242,000
Daily av. to date	1,480,000	1,569,000
ANTHRACITE		
Aug. 29	1,837,000	2,251,000
Sept. 5	1,451,000	432,000
Sept. 12	1,820,000	5,000
Cal. yr. to date	(c) 63,578,000	61,644,000
COKE		
Sept. 5 (a)	112,000	166,000
Sept. 12 (b)	111,000	169,000
Cal. yr. to date	(c) 7,126,000	6,744,000

(a) Revised since last report. (b) Subject to revision. (c) Minus two days' production to equalize number of days in the two years.

Midwest Trade Slackens

Inactivity marked the Midwest coal trade last week. Though most operators in the Franklin County field and those producing the better grades of Indiana coal are still behind in filling orders, it is apparent that this surplus of orders will be absorbed rapidly and a fixed price will appear on lump coal, instead of business being taken on the basis of price current at time of shipment, as for the past two weeks. While orders are plentiful on block with practically none to be had on the open market, the smaller prepared sizes and screenings are still hard to move.

The anthracite strike has not disturbed the general condition in this territory to any extent. Mild weather has had much to do with the falling off in demand, and a further drop is expected. There is no demand for the cheaper grade of coal, with the exception of that covered by contracts. Screenings are somewhat stronger, however, as little is available, but in general the condition in Indiana still remains very poor.

Demand for Eastern coals has fallen off considerably. There has not as yet been a reduction in price, so far as West Virginia and Kentucky coals are concerned, but orders are so scarce that there will no doubt be a cut in order to move tonnage and keep the mines going. A great deal of consignment coal is available, and, of course, speculators are taking a loss on this so as to avoid demurrage. The only real setback the market suffered was on Pocahontas coal, and jobbers who have speculated on this coal are taking considerable losses.

Warm weather has hit southern Illinois hard and over the Franklin and Williamson County field, as well as in Saline, activity has been slowing up. Lump is still moving but egg and nut and even the steam sizes are slow. The warm weather has knocked the props from under everything. Railroad tonnage continues fairly good and the strip mines are working full time, but the shaft mines have been affected. There has been no change in prices since last week but working time has dropped off slightly and unbilled loads at the mines have increased several times.

In the Duquoin field conditions have been affected much as in the other fields. Working time has dropped off a day a week, with no change in prices, but railroad tonnage from this field is almost nothing. In the Mt. Olive district just enough of domestic sizes is being shipped to take care of steam contracts and working time has dropped off two days a week generally in this field. In the Standard district conditions are unusually bad. Coal continues to be sold for the most part at cost or below and there is general dissatisfaction. Working time ranges from two to four days a week. Railroad tonnage is fairly good but nearly all mines have "no bills" on hand every night of all sizes. Prices are unchanged.

Warm weather put a quietus on retail deliveries in

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Low-Volatile, Eastern	Market Quoted	Sept. 22 1924	Sept. 5 1925	Sept. 14 1925	Sept. 21 1925†
Smokeless lump	Columbus	$4.10	$4.60	$4.75	$4.50@$5.00
Smokeless mine run	Columbus	2.10	2.50	2.55	2.40@ 2.75
Smokeless screenings	Columbus	1.20	1.50	1.50	1.40@ 1.60
Smokeless lump	Chicago	3.85	4.75	4.75	4.50@ 5.00
Smokeless mine run	Chicago	1.90	2.60	2.60	*2.25@ 2.50*
Smokeless lump	Cincinnati	3.85	5.00	5.00	*4.50@ 5.00*
Smokeless mine run	Cincinnati	1.85	2.50	2.60	2.50@ 2.75
Smokeless screenings	Cincinnati	1.10	2.00	2.00	*1.75@ 2.00*
*Smokeless mine run	Boston	4.20	5.35	5.50	*5.10@ 5.38*
Clearfield mine run	Boston	1.90	1.90	1.85	**2.25@ 2.80**
Cambria mine run	Boston	2.30	2.10	2.10	**2.25@ 3.00**
Somerset mine run	Boston	2.05	2.00	2.00	**2.15@ 2.35**
Pool 1 (Navy Standard)	New York	2.75	2.85	2.85	2.75@ 3.00
Pool 1 (Navy Standard)	Philadelphia	2.40	2.60	2.65	2.50@ 2.85
Pool 1 (Navy Standard)	Baltimore	2.60	2.30	2.30	2.25@ 2.35
Pool 9 (Super. Low Vol.)	New York	2.10	2.15	2.15	2.10@ 2.25
Pool 9 (Super. Low Vol.)	Philadelphia	2.15	2.05	1.95	1.95@ 2.00
Pool 9 (Super. Low Vol.)	Baltimore	1.85	2.05	2.05	2.00@ 2.15
Pool 10 (H.Gr.Low Vol.)	New York	1.85	2.00	2.00	1.90@ 2.15
Pool 10 (H.Gr.Low Vol.)	Philadelphia	1.75	1.85	1.85	1.75@ 2.00
Pool 10 (H.Gr.Low Vol.)	Baltimore	1.65	1.90	1.90	1.85@ 1.95
Pool 11 (Low Vol.)	New York	1.60	1.80	1.80	1.70@ 1.90
Pool 11 (Low Vol.)	Philadelphia	1.45	1.65	1.70	1.60@ 1.80
Pool 11 (Low Vol.)	Baltimore	1.55	1.70	1.70	1.70@ 1.75
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.50	1.55	1.55	1.50@ 1.60
Pool 54-64 (Gas and St.)	Philadelphia	1.50	1.60	1.60	1.50@ 1.70
Pool 54-64 (Gas and St.)	Baltimore	1.40	1.65	1.65	1.65@ 1.70
Pittsburgh se'd gas	Pittsburgh	2.40	2.50	2.50	2.50
Pittsburgh gas mine run	Pittsburgh	2.10	2.15	2.15	2.10@ 2.25
Pittsburgh mine run (St.)	Pittsburgh	1.85	1.95	2.05	2.00@ 2.15
Pittsburgh slack (Gas)	Pittsburgh	1.25	1.55	1.55	1.50@ 1.60
Kanawha lump	Columbus	2.10	2.60	2.60	2.45@ 2.80
Kanawha mine run	Columbus	1.40	1.65	1.70	1.55@ 1.85
Kanawha screenings	Columbus	1.05	1.30	1.30	1.25@ 1.35
W. Va. lump	Cincinnati	2.35	3.00	2.75	2.50@ 3.00
W. Va. gas mine run	Cincinnati	1.50	1.60	1.65	1.60@ 1.75
W. Va. steam mine run	Cincinnati	1.35	1.45	1.50	**1.50@ 1.65**
W. Va. screenings	Cincinnati	.90	1.20	1.15	1.10@ 1.25
Hocking lump	Columbus	2.50	2.75	2.75	2.65@ 2.90
Hocking mine run	Columbus	1.55	1.65	1.65	1.50@ 1.80
Hocking screenings	Columbus	1.15	1.40	1.40	*1.25@ 1.40*
Pitts. No. 8 lump	Cleveland	2.35	2.50	2.35	2.00@ 2.75
Pitts. No. 8 mine run	Cleveland	1.80	1.90	1.85	1.85@ 1.90
Pitts. No. 8 screenings	Cleveland	1.15	1.55	1.45	1.40@ 1.50

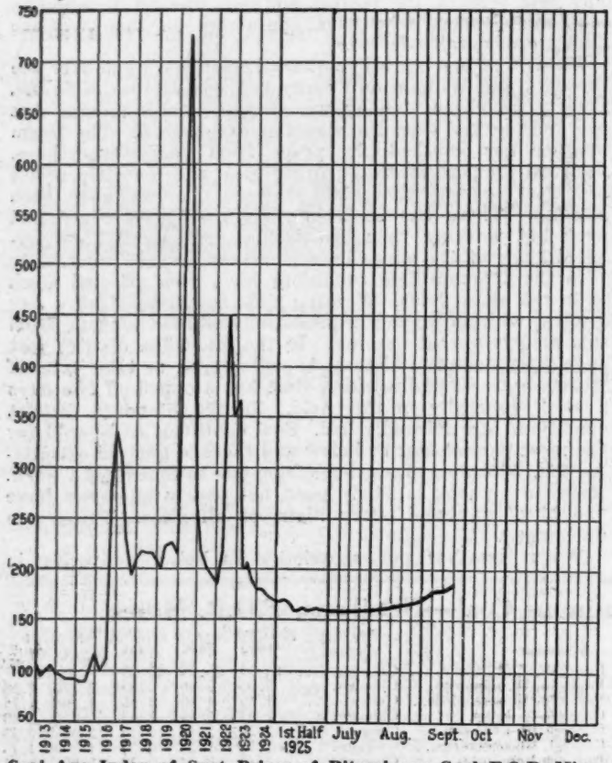
Midwest	Market Quoted	Sept. 22 1924	Sept. 5 1925	Sept. 14 1925	Sept. 21 1925†
Franklin, Ill. lump	Chicago	$3.35	$3.25	$3.25	$3.25
Franklin, Ill. mine run	Chicago	2.35	2.35	2.35	2.25@ 2.50
Franklin, Ill. screenings	Chicago	1.35	1.60	1.60	1.50@ 1.75
Central, Ill. lump	Chicago	2.85	2.85	2.85	2.75@ 3.00
Central, Ill. mine run	Chicago	2.20	2.10	2.10	2.00@ 2.25
Central, Ill. screenings	Chicago	1.15	1.55	1.55	1.35@ 1.75
Ind. 4th Vein lump	Chicago	3.10	3.10	3.10	3.00@ 3.25
Ind. 4th Vein mine run	Chicago	2.35	2.35	2.35	2.25@ 2.50
Ind. 4th Vein screenings	Chicago	1.35	1.60	1.60	1.50@ 1.75
Ind. 5th Vein lump	Chicago	2.60	2.35	2.35	2.25@ 2.50
Ind. 5th Vein mine run	Chicago	2.10	1.95	1.95	1.85@ 2.10
Ind. 5th Vein screenings	Chicago	1.25	1.20	1.20	1.15@ 1.30
Mt. Olive lump	St. Louis	3.00	2.50	2.50	2.50
Mt. Olive mine run	St. Louis	2.50	2.00	2.00	2.00
Mt. Olive screenings	St. Louis	1.25	1.75	1.75	1.75
Standard lump	St. Louis	2.75	2.25	2.25	2.25
Standard mine run	St. Louis	1.80	1.80	1.80	1.75@ 1.90
Standard screenings	St. Louis	.95	1.30	1.15	1.15
West Ky. block	Louisville	2.85	2.10	2.10	*1.90@ 2.15*
West Ky. mine run	Louisville	1.65	1.35	1.35	1.25@ 1.50
West Ky. screenings	Louisville	1.00	.75	.75	.75@ .90
West Ky. block	Chicago	2.70	2.30	2.30	2.25@ 2.40
West Ky. mine run	Chicago	1.65	1.25	1.25	1.15@ 1.35
South and Southwest					
Big Seam lump	Birmingham	3.10	2.25	2.25	2.00@ 2.50
Big Seam mine run	Birmingham	1.60	1.75	1.75	1.50@ 2.00
Big Seam (washed)	Birmingham	1.85	1.85	1.85	1.75@ 2.00
S. E. Ky. block	Chicago	2.85	3.00	3.00	2.75@ 3.00
S. E. Ky. mine run	Chicago	1.60	1.95	1.95	1.85@ 2.10
S. E. Ky. block	Louisville	3.00	3.00	3.00	*2.50@ 3.00*
S. E. Ky. mine run	Louisville	1.55	1.60	1.60	1.50@ 1.75
S. E. Ky. screenings	Louisville	.90	1.25	1.25	1.10@ 1.40
S. E. Ky. block	Cincinnati	2.60	3.00	3.00	2.75@ 3.25
S. E. Ky. mine run	Cincinnati	1.50	1.60	1.55	**1.50@ 1.75**
S. E. Ky. screenings	Cincinnati	1.00	1.20	1.15	1.10@ 1.25
Kansas lump	Kansas City	4.50	4.35	4.35	4.25@ 4.50
Kansas mine run	Kansas City	3.25	3.10	3.10	3.00@ 3.25
Kansas screenings	Kansas City	2.35	2.50	2.50	2.50

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in **heavy type**; declines in *italics*.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

	Market Quoted	Freight Rates	Sept. 22, 1924 Independent	Sept. 22, 1924 Company	Sept. 14, 1925 Independent	Sept. 14, 1925 Company	Sept. 21, 1925† Independent	Sept. 21, 1925† Company
roken	New York	$2.34	.....	$8.00@$9.25	.....	$8.20@$8.95	.....	$8.20@$8.95
Broken	Philadelphia	2.39	.....	9.15	.....	.....	.....	.....
Egg	New York	2.34	$9.00@$9.50	8.75@ 9.25	$13.00@14.00	8.65@ 8.90	.....	8.65@ 8.90
Egg	Philadelphia	2.39	9.00@ 9.70	8.80@ 9.25	.....	.....	.....	.....
Egg	Chicago*	5.06	8.17@ 8.27	8.14@ 8.20	8.17@ 8.60	8.03@ 8.28	$8.17@ 8.60	8.03@ 8.28
Stove	New York	2.34	9.25@10.00	8.75@ 9.50	13.00@14.00	9.15@ 9.40	.....	9.15@ 9.40
Stove	Philadelphia	2.39	9.35@10.00	9.15@ 9.50	.....	.....	.....	.....
Stove	Chicago*	5.06	8.63@ 8.75	8.50@ 8.64	10.00@11.00	8.48@ 8.80	10.00@11.00	8.48@ 8.80
Chestnut	New York	2.34	9.00@ 9.50	8.75@ 9.25	13.00@14.00	8.65@ 8.95	.....	8.65@ 8.95
Chestnut	Philadelphia	2.39	8.85@ 9.80	9.15@ 9.25	.....	.....	.....	.....
Chestnut	Chicago*	5.06	8.26@ 8.40	8.44@ 8.60	10.00@11.00	8.28@ 8.50	10.00@11.00	8.28@ 8.50
Pea	New York	2.22	5.25@ 5.50	5.50@ 6.00	6.00@ 7.00	5.00@ 6.00	.....	5.00@ 6.00
Pea	Philadelphia	2.14	5.75@ 6.25	5.75@ 6.00	.....	5.00@ 6.00	.....	5.00@ 6.00
Pea	Chicago*	4.79	5.13@ 5.45	5.36@ 6.20	5.25@ 5.75	5.05@ 5.36	5.25@ 5.75	5.05@ 5.36
Buckwheat No. 1	New York	2.22	2.25@ 2.90	3.00@ 3.15	2.60@ 3.00	2.50	.....	2.50
Buckwheat No 1	Philadelphia	2.14	2.50@ 3.00	3.00	.....	2.50	.....	2.50
Rice	New York	2.22	1.95@ 2.25	2.00@ 2.25	.....	2.00	.....	2.00
Rice	Philadelphia	2.14	2.00@ 2.25	2.25	.....	2.25	.....	2.25
Barley	New York	2.22	1.25@ 1.50	1.50	.....	1.50	.....	1.50
Barley	Philadelphia	2.14	1.50	1.50	.....	1.50	.....	1.50
Birdseye	New York	2.22	.....	1.60	.....	1.60	.....	1.60

* Net tons, f. o. b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

	1925			1924
	Sept. 21	Sept. 14	Sept. 7	Sept. 22
Index	185	178	179	169
Weighted average price ..	$2.24	$2.16	$2.16	$2.04

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

St. Louis last week and there will be little activity until cooler weather comes. All grades of coal were affected and dealers are paying demurrage because their yards are full. The country demand has also fallen off and dealers in the country seem to have more coal on hand than they can conveniently take care of. Local wagonload is quiet, carload has slumped off some and country steam is hard to locate. No change in prices.

Demand Wanes in Kentucky

The Kentucky market sagged a trifle on prepared sizes last week, due in part to hot weather, along with the fact that Eastern demand as a result of the anthracite strike hasn't developed as rapidly as expected. It is said that some of the jobbers and brokers, figuring that there would be a rapid increase in demand and price, bought a good deal of coal in advance of the anticipated movement, which failed to materialize, causing a slump for the time being.

Local coal men report that while some houses are asking $3.25 for best 4-in. lump in eastern Kentucky, there is practically no coal at over $3, more at $2.75, and some offgrade stuff as low as $2.50. Lump and egg are weaker at $2@$2.50 a ton; mine run is steady at $1.50@$1.75 and screenings firm at $1.10@$1.40.

Western Kentucky 6-in. block is a shade weaker at $1.90@$2.15, some asking $2.25. Lump and egg are firm at $1.85@$2; nut, $1.40@$1.75. Demand in general is not as good as it was, though nut is in very fair movement. Not much mine-run is moving, the price being steady at $1.25@$1.50. Screenings are in smaller production, as a result of reduction in output of prepared, and the price has advanced to 75c.@90c.

Steam movement continues good and demand strong, especially on screenings. Cooler weather will start prepared moving again and aid the market materially.

Northwest Market Stiffens

Dock operators at Duluth and Superior note a sustained improvement in business in the last ten days. Shipments have been substantial so far this month and it is expected that the August record of 20,778 cars will be surpassed. The flurry in anthracite ordering that developed when the strike set in is over for the time being, but a revival is looked for when normal fall weather appears.

Orders for Pocahontas have more than doubled as compared with a year ago and the movement is expected to continue to gain when domestic buying opens next month. Two of the docks reported that they are completely sold up in prepared sizes and are pushing mine-run with a fair measure of success. Lump, egg and stove are steadily stiffening, the third advance of 50c. within six weeks becoming effective this week, bringing the dock figure to $8.50. Mine-run and screenings are unchanged at $5.25 and $4.25, but dealers expect an advance Oct. 1.

The market in all high-grade Kentucky coals also is stiffening with increasing domestic demand, but apart from Pocahontas, quotations on soft coals are unchanged.

Dealers are getting set for a heavy demand for domestic coke and briquets as anthracite substitutes. Quotations are $8.50 for coke and $9 for briquets.

Demand for steam coals from industrials is improving and inquiries from utilities are gaining as a result of low water in hydro-electric storage dams.

Receipts of coal from Lake Erie ports are continuing in good volume, thirty-nine cargoes, including one of anthracite, having been unloaded at the docks last week. Stocks of bituminous coal on commercial docks are now placed at 3,700,000 tons and anthracite supplies at 275,000 tons.

Coal dock managers at Milwaukee report a falling off in demand as compared with a few weeks ago. Dealers are ready, but orders from consumers do not materialize. The situation at the anthracite mines has not alarmed consumers, who seem to feel that differences will be smoothed out before supplies on hand are exhausted.

Receipts by lake for the season up to Sept. 17 total 2,422,815 tons—488,234 tons of anthracite and 1,934,581 tons of bituminous coal. The receipts during the same period of 1924 aggregated 1,811,433 tons—497,223 tons of anthracite and 1,314,210 tons of bituminous coal. During the month of August Milwaukee received 37,330 tons of coal by rail—3,325 tons of anthracite and 34,005 tons of bituminous.

Southwest Trade Gets Tonic

A brief period of temperature in the 70s and 80s has had a tonic effect on the Southwestern market. Dealers still are buying in substantial quantities and new mines are opening in Kansas, which is profiting by the instability of production resulting from the strike in Oklahoma and Arkansas. While output has not been cut in the latter state, the strike and the uncertain labor conditions which preceded it have deterred some of the larger operators from reopening their mines. In Oklahoma, less coal is being mined than before Sept. 1 and the psychological effect has been to curtail the demand for coal from that field.

Demand for domestic coal in the Colorado market continues to increase. As a result the mines are speeding up production. Prices are: Walsenburg lump, $5.50; washed nut, $4.50; washed pea, $3; Trinidad coking lump over 6-in. screen, $4.25; over 3-in. screen, $4; nut, $3.75; pea, $3; Trinidad Segundo coke, $7.50; Crested Butte high grade anthracite Nos. 1 and 2 (furnace size), $7.25; Nos. 3 and 5 (base burner size), $7.75.

Coal is moving better in Utah now than for many months. There is still much less coal in storage than a year ago, due to the fact that the elimination of storage rates this year kept many from purchasing winter supplies in June, July and August. Some of the mines are working near capacity and the majority are working at least half time. Lump coal is selling best, but there is a good demand for all sizes. The increased working time at the mines is causing a little surplus of slack.

Smokeless Flops at Cincinnati

At Cincinnati the price of smokeless was run up too fast, and last week it came a cropper. Starting the week with $5 and $5.25 asked for coal that could be delivered immediately, sour reports from the markets that had been the

best takers caused some jobbers and others who had been playing the market too strong to put their tonnage overboard around $4.50 for egg and $4.75 for lump. Again, the weather has been a depressing factor, and even some producing companies that had been fishing for a $3 market on mine-run early in the week were willing to talk $2.50. Then again an overload of coal was taken out of the usual contractual channels and diverted to the week-to-week market.

High volatile was in much better shape. Here the Hazard block, which has moved up to $2.75, has been able to maintain its position, as has Elkhorn at $3@$3.25 and the Harlans around $2.75@$3. The dead weight of $2.50 as the quotation by Logan County's biggest producer has held some of the West Virginia prize coals back, but quality, advertised and specialized stuff has been able to hold in the range of $2.75@$3 in spite of the setback to Pocahontas. Egg prices hold fairly firm with a spread of $2@$2.50 and mine-run has stiffened within a general range of $1.50@$1.75. Only slack and screenings have not improved their position.

Car records for the week fell a little below those of the week preceding but were far ahead of those of last year. Retail business still feels its way locally, prices having eased slightly. River business is at a low ebb, due to the low stage.

Because of extreme hot weather and also due to the fact that retailers are pretty heavily stocked, domestic buying at Columbus is not as active as a week ago, but prices have not weakened to any extent. Only a limited amount of smokeless is coming into the Columbus market. Splints and Kentucky block varieties are moving fairly well. Ohio grades have not shared in the general activity, although quite a few mines have been opened, after an idleness of from several months to a year.

Little change has taken place in the steam trade. Contracting is reported at intervals and most of the larger consumers have made agreements for a large part of their requirements. Some of the manufacturing plants are buying on the open market and prices have not advanced, even in the face of the anthracite strike. Screenings are slightly weaker, owing to the increased production of lump and other prepared sizes.

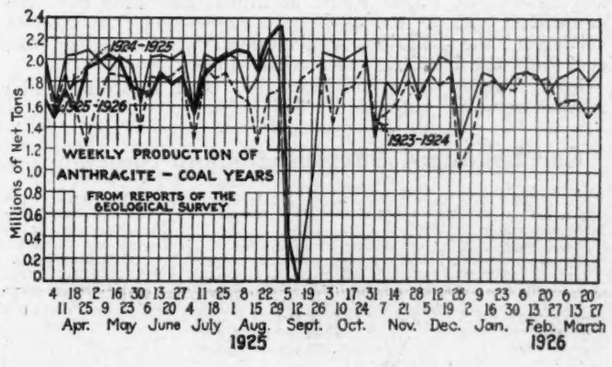
Lake records show that the Hocking Valley R.R. at Toledo has handled 1,178,000 tons more up to Sept. 16 than was handled last year up to the same time.

The situation in eastern Ohio is unchanged as compared with a week ago, and this sameness also applies to spot prices. Demand for both steam and domestic has lapsed into the lethargy which prevailed during the summer months. Were it not for the fact that Ohio mines are shipping some Lake coal and certain buying on the part of railroads and a few other large steam consumers, the demand for bituminous would be as dull as ever. One or two mines in eastern Ohio are said to have recently reopened mainly for shipping Lake coal.

Demand Gaining at Pittsburgh

Demand for Pittsburgh district coal increased a trifle more in the past week, chiefly by way of a heavier movement of domestic lump. In general prices are somewhat higher than when the movement began to open up early in August.

Steam lump is moving fairly well. Consumption is slightly heavier than in July and some consumers are stocking in a moderate way. The market has been stiffening, and is now quotable for 3-in. Pittsburgh district steam lump at about $2.25@$2.35, although some sellers consider $2.35 the minimum.



Steam slack, which stiffened a trifle a few weeks ago, has lately been at the old range of $1.30@$1.40, but this represents a better market, for with more shipments of lump there is more slack and it means better demand for this not to have definitely depressed prices.

The labor situation is growing more complicated and uncertain, the men at two Connellsville plants having gone on strike last week. The Pittsburgh Coal Co. is now operating two mines.

No stir is visible in the Buffalo market despite the hard-coal strike; a 50c. advance in some sorts of smokeless about covers it. The increased output is a puzzle to everybody, for consumers are not stocking up, so they must be using it. Quotations are $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run and $1.25 to $1.40 for slack; $2.25 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, and $1.30 to $1.60 for slack; $1.75@$2 for Allegheny Valley mine-run; Cambria county smokeless sells for $6@$6.25 at the curb.

New England Market Eases

Cessation in demand from the west for New River and Pocahontas has increased the movement to the southern loading piers and as the demand for coal there has been very light, f.o.b. prices have suffered considerable decline this past week. For the very best of the low-volatile mine-run coal $5.32 gross ton f.o.b. is as high as is now asked against $5.50 a week ago and very good coal has been offered at $5.25. Some tonnage of fair quality coal has been available as low as $5.10.

This lower level at the piers has been promptly reflected at the New England tidewater terminals, where demand, which has been light for several weeks, has dropped to almost negligible proportions and even orders for one or two cars have been acceptable at $6.50 gross ton on cars Boston. For these small orders last week $6.60 was minimum and up to $6.75 was obtained. For orders running into sizeable tonnage it is more likely that $6.50 would be shaded, but there has been nothing of this nature consummated. At Providence certain shippers are making strong efforts to hold the price at $6.50 on cars for high-grade Southern coal, but orders at that figure have been scarce and $6.40 is named not infrequently for excellent coal. Some tonnage of smokeless has been offered at $6.35 and as low as $6.25 is heard.

Arrivals at all of the tidewater discharging terminals have been light the past week and practically all of the tonnage discharged at railroad wharves has been sold before making port. Consequently distress coal continues conspicuous by its absence; otherwise prices doubtless would be even lower.

The all-rail market has come into prominence this week through a rather liberal demand for prepared coal for domestic use. Coal from the Broad Top district seems to be most popular and is commanding $4.75@$5 net ton mines. Certain shippers here are guaranteeing degradation not more than 10 per cent and in this way are obtaining $5.25.

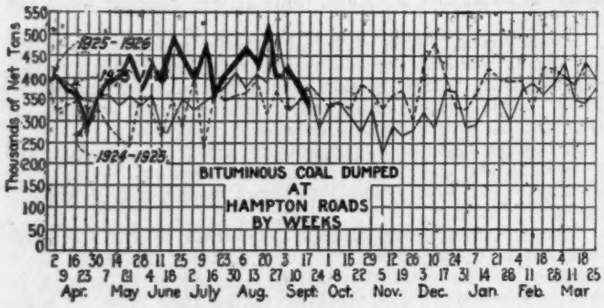
Business Steady at New York

The bituminous coal market at New York is in good shape. Demand is steady and quotations are firm at last week's level. Buyers are able to get their orders shipped promptly because of the heavy output. Most of the coal moving is on old orders at low prices, new orders being booked at advances of from 20c. to 30c. above those figures.

It will be at least three weeks or a month before the effects of the anthracite strike will be felt in the soft-coal industry unless there is a sudden change in weather conditions. Consumers are slowly increasing their reserves. The better grades are scarcer and even the cheaper coals are in better condition than they were a few weeks ago.

Soft coal demand seems to have lagged a bit at Philadelphia during the past week, but the general expectation is that it will pick up additional momentum before long. Railroad fuel is fairly active and more satisfactory, particularly on new business placed lately.

The fact that the miners' union has called a strike of non-union miners in the Fairmont field effective Sept. 26 has created barely a ripple here. The tide situation is



quite flat, for, outside of bunkering, which is at the normal rate, nothing is being done in the shipment of cargoes over the piers.

While it cannot be said that gas and steam coals are decidedly stronger at Baltimore the fact remains that the entire soft-coal situation is stiffening slowly. Demand is increasing not only in this section, but jobbers here are interested in considerable movements westward, especially of gas coals. Coal men in Baltimore are not taking seriously the threat of a strike in the non-union fields on Oct. 1. Local industries are beginning to lay in supplies or to get under contracts for the fall and winter season, although a much larger proportion than usual continue to buy in the open market. Prices remain about the same as quoted last week, although the tendency is to buy nearer the top figure than the minimum quoted on average selling prices. Despite predictions that the export trade was not due for any material increase in September, the second week of the month has seen quite a substantial loading.

There has been no material change in market conditions at Birmingham in the last week. Domestic buyers continue to show an indifference toward stocking coal heretofore unknown at this time of year, yards as a whole carrying the smallest reserves on record just prior to the beginning of the winter. Spot sales are scattering and do not amount to any great tonnage in the aggregate. Contract-holding mines are being restricted sharply in the movement of fuel under agreements and considerable domestic product is being applied on steam orders.

Inquiry and bookings for all grades of steam coal are fairly good, high-grade washed product still being most active, with output and movement running neck and neck on some of these grades. The medium and lower qualities are not so readily taken but are being disposed of without great effort. Bunker trade shows no special activity, with about the normal consumption being called for at the Southern ports. Prices are unchanged.

Buying of foundry coke is somewhat more active than a few weeks back, with quotations on byproduct ranging $4.50@$4.75 and beehive $5 per net ton ovens. There is sufficient call for the domestic sizes to move the supply, much of this product going into the North and Middle West for use in heating plants. Quotations are $3.50 for nut and $4 for egg.

Hard-Coal Consumers Calm

With the possible exception of stock coal and a few loaded bottoms in the harbor the visible supply of anthracite at New York is cleaned up. Retail dealers have good stocks on hand and so far have been able to take care of their customers, although not filling all orders at one time.

A comparatively small volume of hard coal is moving through wholesale channels. The boats that dotted the harbor and piers when the strike was called have been unloaded to a large extent and the remaining few are owned by middlemen.

Some stock coal is coming through, but the tonnage is small. Operators, with few exceptions, are not quoting prices and the figures that are obtainable are mostly from middlemen who have loaded boats on hand. The tendency to pay exorbitant prices, which was prevalent in former strikes, is not so noticeable this year, buyers hesitating considerably before paying the prices asked by middlemen.

While some effort has been made to urge the use of substitutes, orders have been few, but a more intensive educational campaign is certain if the strike continues much longer.

Local quotations last week were about as follows: Egg and chestnut as high as $17.25 alongside; stove, $18 also alongside. Pea coal was quoted on a basis of $6.50@$7 f.o.b. mine, while stock chestnut was quoted on a basis of $13 at the loading place.

Though no coal has been mined for three weeks, Philadelphia consumers seem indifferent. Of course, a heavy tonnage was put in the cellars this summer and summer weather lingers.

Company shippers are about done shipping any size larger than pea, with the last shipments of nut now running. It is believed that only one big company has any pea in storage and it is predicted that it will all be ordered by the end of this week. The supply of company buckwheat seems unlimited and orders are not coming along very fast. Rice is still in fair supply. Users of barley are having their needs taken care of by the substitution of rice.

Retail prices have stiffened considerably, the large sizes averaging close to $16 a ton. Stove is scarce with all dealers, yet some of the more important ones quote chestnut at $16 a ton, while stove is only $15.50. Pea coal generally is $11@$11.50.

At Baltimore stocks on hands of dealers are being gradually released, many still sending out coal on new business. If present conditions are long continued there will be a pinch unless renewed shipments begin from the mines. Undoubtedly there will be a turn to substitutes. Many consumers here are only partly stocked and quite a number have no hard coal in their cellars.

The Buffalo hard-coal trade is at a standstill but dealers are tranquil about the situation, even if there is complaint and showing of distrust. There is plenty of pea and buckwheat to be had at former prices, but consumers show little interest.

There is no business in water coal and there will be none till new-mined coal is in. It does not appear that the upper-lake ports are anxious for more and it is likely that they will stand a liberal shortage without suffering. The use of coke and smokeless coal will prevent any real distress.

Offerings of egg, stove and nut anthracite in New England have about come to an end but the big companies are still taking orders and shipping pea at regular company circular. Retail demand for anthracite slowed somewhat last week, but there is still a brisk demand for coke, so the big factor in New England-made coke is now about three weeks behind in deliveries.

Connellsville Coke Market Unsettled

On account of fear of labor trouble Connellsville coke operators have been quite indisposed to push sales, and because of recent advances in the market Eastern buyers have been less disposed to buy, the result being a very quiet market in the past week, as to turnover.

The spot furnace coke market is quotable on the basis of latest sales at $3.75@$4, a 25c. advance, but these figures are perhaps nominal in view of latest developments.

The Jones & Laughlin Steel Corporation, which is now operating 10 of its 12 blast furnaces, has made inquiry for 20,000 tons of coke a month over the last quarter, but the trade figures it needs nearer 40,000 tons and is indisposed to quote at all, except possibly for October. The company's mines are in the union district so that it is not in position to produce its usual quantity of coke.

The independents in the Connellsville region have a scale fully 30 per cent below the Frick scale and thus have been in a delicate position when the Frick company has lately blown in so many ovens. Labor troubles might easily arise, and to advance wages would be injudicious when the coke demand is due to the anthracite suspension, for after a settlement the operators would be left with a higher coke cost than the blast furnaces could stand for.

Spot foundry coke continues dull, and accordingly the market remains quotable at $4@$4.50.

Car Loadings, Surplusages and Shortages

	Cars Loaded — All Cars	Coal Cars
Week ended Sept. 5, 1925	1,102,946	178,218
Previous week	1,124,436	211,683
Week ended Sept. 6, 1924	921,303	149,945

	Surplus Cars — All Cars	Coal Cars	Car Shortage —	
Sept. 7, 1925	146,998	43,289	.....	.....
Aug. 31, 1925	162,397	40,427	.....	.....
Sept. 7, 1924	194,306	97,089	.....	.....

Foreign Market And Export News

Trade Lags Despite Low Prices In British Coal Market

Hopes for an improvement in the British coal trade in early September have not materialized and the outlook at the moment is very unfavorable. Though prices have reached their lowest level, foreign buyers still believe that they will recede still further and are holding up their orders. In addition to this consumers at home and abroad have heavy stocks still on hand. Accumulations at the pits are growing and it is only day-to-day shipments that enable the collieries to carry on. In some cases it has been possible to avoid stoppages, but several collieries have had to close down for periods varying from two to ten days. The operation of the pits under the present conditions is most costly, and though the excess of wages payable under the new agreement is borne by the government subsidy, few pits are being worked at a profit. It is hoped that this month will see some improvement due to decreased stocks in buyers' hands.

Low prices have failed to bring any more business to Newcastle, and the market is exceedingly quiet. Coal is offered freely for current shipment and at slightly lower prices, but business is not forthcoming. The only contract to report is one for forward shipment of various consignments totaling from 60,000 to 100,000 tons of Durham coals for Hamburg over twelve months, beginning October, at 16s. 6d. per ton for coking unscreened, c.i.f., and 16s. 10½d. for second Durham gas coals, c.i.f., with a guaranteed percentage of ash. These prices, after deducting freight, etc., leave under 13s. per ton for the coal.

Output by British collieries during the week ended Sept. 5, according to a special cable to *Coal Age*, totaled 4,255,000 tons, compared with 4,085,000 tons in the preceding week.

French Market Is Lacking in Noteworthy Developments

In the French coal market nothing noteworthy has happened of late. Consumption is in *statu quo* and the demand upon the Nord and Pas-de-Calais collieries, on the whole, remains satisfactory. Contracts, on coming due, are generally renewed without difficulty.

The market is well sustained with regard to home fuels. As to screened varieties, they are less neglected than heretofore. Sized descriptions continue in excellent request. The demand for industrial coals is stationary.

Rouen has announced the arrival of a consignment of anthracite samples from Russia. Several French firms are trying hard to obtain a monopoly on these fuels. Russian anthracite, as sampled by consumers of the Parisian region, has been found to resemble American anthracite in that it ignites less readily than Welsh anthracite.

During the entire month of August the O. R. C. A. received from the Ruhr 230,471 tons of indemnity coke, an average of 7,750 tons daily.

The Office des Houillères Sinistrées, which has the charge of the sale of indemnity fuels has issued a new price schedule which embodies a number of advances, in some instances as high as 20 fr.

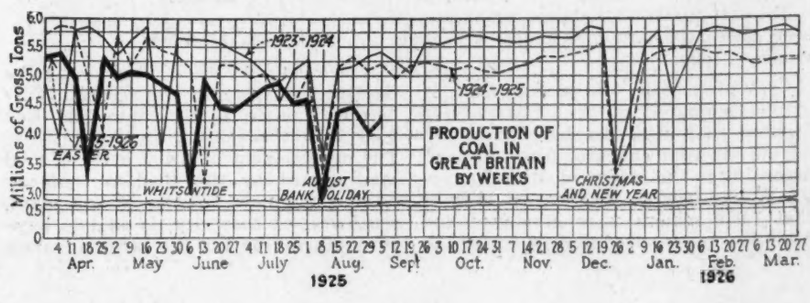
Belgian Market Brightens As Steel Plants Resume

Announcement of the resumption of work in the iron and steel industry has given a fillip to the movement of industrial coals and cokes in the Belgian market. The improvement is manifest at Mons, Charleroi and Brussels. Collieries report orders more numerous and shipments active. Moreover, stocks are being resorted to with more vigor.

Up till now, however, there has been no talk of changing prices. As German and British competition is still keen, a decrease is not improbable.

Reports are current that wages may be cut, 15 per cent being the reduction that was to be proposed to the mixed commission. However, it is a ticklish matter to press at a time when the index number is on the rise.

The situation in house fuels continues good, with prices hardening for anthracite descriptions at inland points. With regard to briquets the situation is unchanged.



Trade Eases Back to Normal At Hampton Roads

The first rush of coal buying, following the anthracite strike, having died down, business at Hampton Roads last week was about normal, with prices only slightly weaker than the week before, and demand holding its own. Foreign business was somewhat off, but bunker and coastwise trade was holding up.

Supplies at tidewater were normal and a number of mines reported production increasing in view of a possible heavy demand for coal during the next month. The tone of the market was firm, inquiries were steady and shippers were anticipating a steady increase in demand during the next month.

Export Clearances, Week Ended Sept. 19, 1925

FROM HAMPTON ROADS

	Tons
For Argentina:	
Br. Str. Cape of Good Hope, for Buenos Aires	7,311
For Brazil:	
Br. Str. General Lukin, for Para	4,388
For France:	
Fr. Str. P. L. M. 22, for Rouen	8,246
For Newfoundland:	
Nor. Str. Thomas Haaland, for Lewisport	4,531

FROM BALTIMORE

For Italy:	
Ital. Str. Isonzo 2, for Genoa	3,501
Nor. Str. Marie Nielsen, for Halifax	2,107
Br. Str. Hypatia, for Leghorn	5,068

Hampton Roads Pier Situation

(Gross Tons)

N. & W. Piers, Lamberts Pt.:	Sept. 10	Sept. 17
Cars on hand	1,582	1,756
Tons on hand	98,076	108,736
Tons dumped for week	126,043	145,119
Tonnage waiting	15,000	20,000
Virginian Piers, Sewalls Pt.:		
Cars on hand	676	968
Tons on hand	52,650	76,200
Tons dumped for week	75,584	57,612
Tonnage waiting	927	7,656
C. & O. Piers, Newport News:		
Cars on hand	1,890	2,607
Tons on hand	96,210	132,430
Tons dumped for week	140,279	83,785
Tonnage waiting	5,730	115

Pier and Bunker Prices, Gross Tons

PIERS

	Sept. 12	Sept. 19†
Pool 1, New York	$5.35@$5.60	$5.35@$5.60
Pool 9, New York	4.80@ 5.00	4.80@ 5.00
Pool 10, New York	4.50@ 4.70	4.50@ 4.70
Pool 11, New York	4.30@ 4.55	4.30@ 4.55
Pool 9, Philadelphia	4.85@ 5.05	4.85@ 5.05
Pool 10, Philadelphia	4.55@ 4.75	4.55@ 4.75
Pool 11, Philadelphia	4.35@ 4.55	4.35@ 4.55
Pool 1, Hamp. Roads	5.40	*5.35*
Pool 2, Hamp. Roads	5.20	**5.30**
Pools 5-6-7, Hamp. Rds.	4.75@ 5.00	**5.00**

BUNKERS

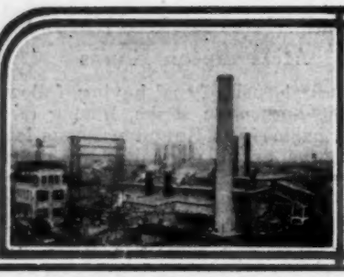
Pool 1, New York	$5.60@$5.85	$5.60@$5.85
Pool 9, New York	5.05@ 5.25	5.05@ 5.25
Pool 10, New York	4.75@ 4.95	4.75@ 4.95
Pool 11, New York	4.55@ 4.80	4.55@ 4.80
Pool 9, Philadelphia	5.05@ 5.25	5.05@ 5.25
Pool 10, Philadelphia	4.75@ 4.85	4.75@ 4.85
Pool 11, Philadelphia	4.60@ 4.74	4.60@ 4.75
Pool 1, Hamp. Roads	5.50	*5.50*
Pool 2, Hamp. Roads	5.30	**5.40**
Pools 5-6-7, Hamp. Rds.	4.75@ 5.00	**5.10**

Current Quotations British Coal f.o.b. Port, Gross Tons

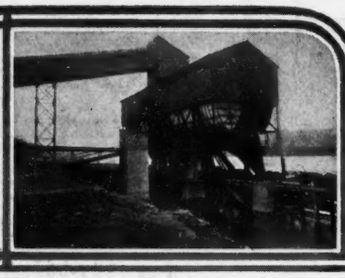
Quotations by Cable to *Coal Age*

Cardiff:	Sept. 12	Sept. 19†
Admiralty, large	24s.@25s.	*24s.*
Steam smalls	11s.6d.@12s.	*11s.3d.*
Newcastle:		
Best steams	15s.	15s.
Best gas	17s.6d.	17s.6d.
Best bunkers	15s.	15s.

† Advances over previous week shown in **heavy type**; declines in *italics*.



News Items From Field and Trade



ALABAMA

Erskine Ramsay, former vice-president of the Pratt Consolidated Coal Co., and a large stockholder and director in the Alabama By-Products Corporation, with which the former company was merged a year or more ago, has announced a gift of $100,000 to Birmingham-Southern College and a like amount to Howard College, local institutions. Mr. Ramsay is internationally known as a mining engineer and inventor of machinery for the preparation and handling of coal, and is one of Birmingham's foremost industrial and civic leaders and capitalists. Intensely interested in the cause of education, Mr. Ramsay has in recent years contributed liberally of his means to state institutions, giving $100,000 toward the establishment of an engineering hall at Alabama Polytechnic Institute, Auburn; $100,000 to the State University at Tuscaloosa, and a similar amount to the Alabama College for women, located at Montevallo.

The Galloway Coal Co. will give a barbecue to its employees at Carbon Hill Sept. 26, at which time contest will be held with first-aid and mine-rescue teams from all its operations participating for the purpose of deciding which teams will represent the company in the seventh annual field meet to be held at Rickwood Field, Birmingham, Oct. 6. Officials of the Alabama Mining Institute and prominent mining executives throughout the district have been invited to attend.

The Birmingham station of the U. S. Bureau of Mines will be equipped with a new truck with mine-rescue apparatus, including five tanks of oxygen, a pump, five Burrell gas masks, safety lamps, etc. The truck and equipment is expected to be received in time to be placed in service by Nov. 1 and will replace the old truck and apparatus which has been in use for many years. The station is in charge of F. E. Cash as resident engineer.

The byproduct plant of the Republic Iron & Steel Co., at Thomas is rapidly nearing completion and is expected to be ready for operation the latter part of October. The ovens and equipment for the preparation and handling of the byproducts are being built by the Koppers Company, there being 57 ovens in the battery, so arranged that additions can be readily made to meet future requirements. The plant will be complete and modern in every respect, employing the latest and best methods known for coking coal and extracting and handling the various byproducts.

ARKANSAS

Judge Frank A. Youmans has granted the Western Coal & Mining Co. a temporary restraining order enjoining Jack Weatherman, of Franklin County, against interfering with the operation of the company's mine No. 6, at Denning, by cutting off its water supply. The order was granted without notice to the defendant. Hearing on an application for a preliminary injunction was set for Sept. 21. The plaintiff made bond in the sum of $5,000. The order enjoins the defendant from removing pipes from the pond on his land, from which the plaintiff obtains water to operate the mine. The affidavit of A. L. Toenges, superintendent of the plaintiff company, was presented to show that the defendant had threatened to remove the pipes.

ILLINOIS

After having been closed down for eighteen months the Assumption coal mine, at Pana, has resumed operations, a new company having been organized and taken over the mine. The mine is 1,006 ft. deep, the deepest in Illinois, and the coal is considered the highest grade coal mined in Illinois.

Maplewood Mine No. 1, Farmington, has reopened as a co-operative mine.

Mine No. 9, at Langley, has finished a straight twenty-six day run making a record hoist, which averaged 5,500 tons a day for the actual working days of August. No. 8 Mine, Tovey, Ill., has had a daily average of over 5,000 tons for the twenty-six working days of August and No. 58 has increased its output as well. The pay roll of these three mines for the month of August will total more than a half million dollars.

Capitol Mine No. 57 of the Peabody Coal Co., Springfield, hoisted 1,731 pit cars in eight hours Sept. 3. The present management of this mine has brought the hoisting record from a thousand-car average to the present record in the last three years.

The coal mine at Edinburg, which has been closed the past two years, will be reopened soon.

Coal production and the number of miners employed in the Edwardsville district showed a decided falling off during the year ended on June 30, last, according to the report of Mine Inspector A. E. Lewis. The report showed that 3,959 miners were employed and 3,100,688 tons produced during the year. In 1923-24, 4,376 men were employed and 3,444,685 tons produced. Seven men were killed and 241 injured during the last year. The average, one death to each 442,955 tons, was about normal. The miners used 30,771 kegs of powder to blast down the coal, the report shows.

H. C. Knemoeller, county mine inspector of Macoupin County, reports that a total of 6,216,408 tons of coal was mined in that county during the fiscal year ended June 30, 1925. This is about 150,000 tons more than was produced in the year previous but is about one and one-half million tons short of the high mark.

Thomas J. Smith, of Pana, has for the eleventh successive term been appointed by the County Board of Supervisors County Mine Inspector of Christian County, making 22 successive years under both Republican and Democratic administrations.

A minature coal mine which will depict in detail the operation of hoisting coal from the earth, screening and dumping it into cars, together with moving pictures showing all underground operations of a mine, with first-aid and rescue work, is being shown at the Illinois State Fair at Springfield. The display has been prepared by the Peabody Coal Co., Chicago, and is in charge of G. J. Stelte, an official of the company's office in Springfield. The model mine is 6 ft. high and is constructed on a ratio of 1 to 24, being an exact reproduction of the company's mine No. 9 in Christian County. The model mine is electrically operated and is driven by a minature power house. The entire model is enclosed in glass, thereby preventing spectators from being annoyed by dust, yet permitting minute observation of its workings.

A 6-ft. bed of coal at 500 ft. was passed through Sept. 12 in the drilling of a prospect oil well on the Fitzpatrick farm near Pana. Three showings of oil were found. It is planned to mine the coal for market purposes.

INDIANA

A mortgage of $300,000 given by the Bledsoe Coal Co. to the Terre Haute National Bank, Terre Haute, has been filed with the County Recorder there. The development of 3,400 acres of coal land owned by the Bledsoe company around the new Dresser power plant, southwest of that city, is said to have been the reason for the large advance.

This sum will be used in the sinking of shafts and otherwise putting the field on a production basis. The mortgage was given by the directors with the approval of the stockholders with the proviso that it be paid off in ten annual instalments of $30,000, the first payment due Sept. 1, 1926. Seven per cent interest is being charged.

Fire of unknown origin recently destroyed the mule barn at Crown Hill mine No. 5, at Clinton, together with eighteen mules in the barn. The building was insured.

The Radiant Coal Co., Terre Haute, has filed a final certificate of dissolution.

The Fort Branch coal mine, at Fort Branch, which has been closed since last April, has resumed operations, after signing a contract whereby electric loading machines will be used. Installation of the machines made necessary a new wage contract with the miners.

If a general strike of the anthracite coal industry continues thirty days or longer, the Indiana coal fields will resume full operation, according to Tyler G. Lawton, president of the District No. 11 United Mine Workers. Already in relation to the immediate resumption of work, some of the mines in Sullivan County have received large contracts and are enjoying a complete revival in business. In citing a similar instance, Mr. Lawton said in 1902 the soft coal fields were in about the same condition as they are now. The anthracite miners were called out in a general strike in April of that year and stayed out for more than nine months. Almost immediately the soft coal industry resumed full operations.

Contracts for the supply of coal for the coming school year at Terre Haute have been awarded. Bray Brothers were given the contract for supplying one-half the coal on a bid of $3.69 for 1¼x2-in lump from the Starko mine. The DeLuxe Coal & Coke Co. was given the other half on a bid of $3.70 for 1¼x 2-in lump and $3.50 for 2x4-in lump. A number of other companies entered bids.

The New York Central Lines, whose southern Indiana coal terminal is located at Petersburg, will begin work with a large force of men soon building additional trackage to take care of the increased coal business in southern Indiana. The opening of new strip mines in Pike County is increasing the tonnage along the E. & I. division of the road, making it necessary for the company to build more yard tracks at Petersburg. The Pike County Coal Co., which owns thousands of acres of rich coal land in the western part of the county, has asked the railroad to run a spur road from Petersburg to Oatville, eight miles southwest.

The Winslow Mining Co., Winslow, has filed a final certificate of dissolution with the Secretary of State.

Asserting that they are justified in striking because of the increase by the C. & E. I. R.R. in transportation rates, members of the Clinton train committee of the United Mine Workers met recently with district officials and members of the Terre Haute train committee in a conference in an attempt to settle the trouble which has the Clinton field tied up. It was decided to send representatives to confer with John L. Lewis, to determine whether Terre Haute miners would join the Clinton strikers. The understanding is that Phil A. Penna, secretary of the Indiana Bituminous Coal Operators' Association, has communicated with Mr. Lewis regarding the strike and is treating the matter as a breach of contract.

KENTUCKY

Heavy rains over the week end, starting on Sept. 12, have improved the water supply materially in Kentucky. Several mines were handicapped by a long drought and dried up water supplies, it having been reported that a few isolated operations were forced to close down in early September, due to lack of boiler water.

Involuntary bankruptcy proceedings were filed in the U. S. District Court at Covington, Sept. 5, against the Sullivan-Pond Creek Coal Co., which has its principal offices at Shock, Pike County. The complainants were the Rice-Hutchins Baltimore Co., Baltimore, Md.; the Banks Miller Co., Huntington, W. Va., and the Persinger Hardware & Manufacturing Co., Williamson, W. Va., whose claims aggregated $1,404.85.

The properties of the Letcher Coal Mining Co., in Letcher County, near Whitesburg, which have been in the courts for some time, are still idle, awaiting a final court order. The Harlan Coal Co., Louisville, which is a large creditor figures to take over the mines and place them in operation.

Seven coal towboats with 45,000 tons of coal were among eight boats that passed the Maysville locks on Sept. 4, on an artificial river rise. The Lockmaster at Dam No. 33 reported 953 boats through the locks during the month of August.

MINNESOTA

T. T. Hammitt, sales manager of the North Western Fuel Co., Minneapolis, was a visitor at Duluth during the week of Sept. 19. He commented upon the steady gain in sales of dock coal throughout southern Minnesota as a result of the adjustment in the all-rail rates from the Illinois, Indiana and Kentucky mines into that territory.

Ford Motor Co. interests at Duluth have said that steps by which the company will obtain title to the Superior dock at Duluth now under lease to it are being taken. They hope the company will be able to carry through an extension and improvements to the dock during the coming winter. In the meantime the two Ford steamers are maintaining their schedules of runs with their coal to this market.

A conference is to be held this month in St. Paul, of Twin Cities business men and representatives of the Illinois Coal Operators' Association with Brig. Gen. T. Q. Ashburn, chief of inland waterways transportation, to discuss the use of the Mississippi River for transporting southern Illinois coal to the Twin Cities by barge.

NEW YORK

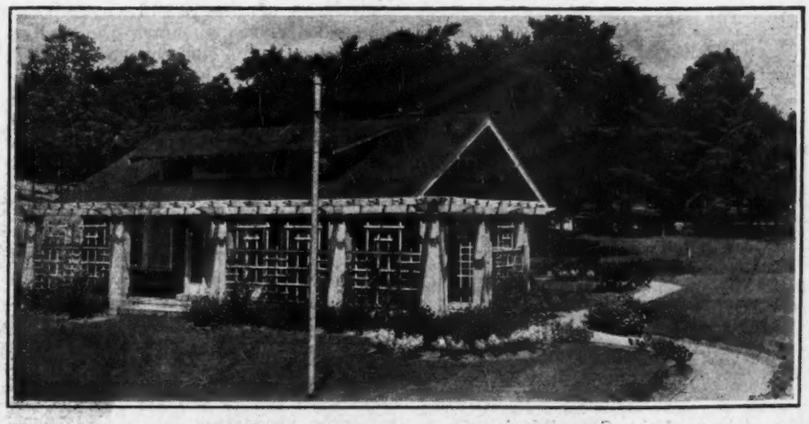
Joseph J. Eagan, a well-known Buffalo coal shipper, has bought a large interest in the Acme Coal Co.'s mine at Reimersburg, Pa.

NORTH DAKOTA

Lignite producers of North Dakota anticipate increasing their production should the effects of the anthracite strike call for it. It is claimed that the production of last year of slightly over a million tons can be doubled.

OHIO

One of the mines of the Maher Collieries Co., of Cleveland, located at Neffs, which had been idle for eight months, has opened recently employing approximately 300 miners. The mine has a capacity of about 2 000 tons daily and production is rapidly reaching the peak. Three mines of the Lorain Coal & Dock Co., of Columbus,



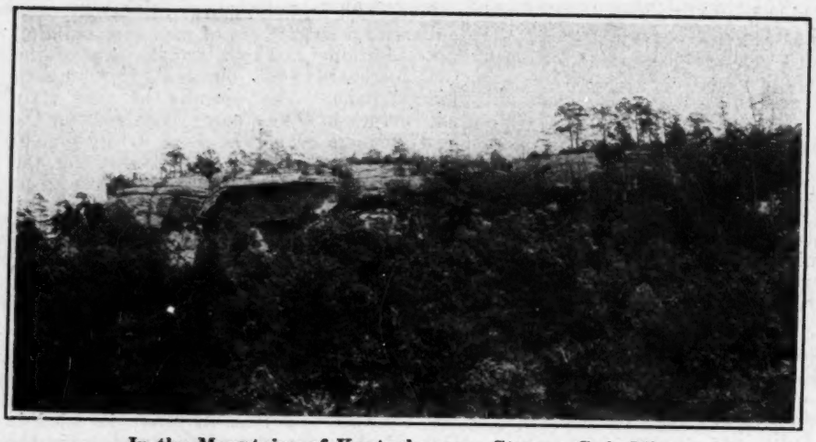
Modern Kindergarten at Edgewater, Ala.

In this attractive little building the children of this Southern mining town begin their efforts in "book learning." No more does the metropolitan youngster "get the jump" on his industrial-town cousin in the matter of early education. Not alone in this but in many other small communities the kindergarten has today become an established reality.

have been operated during the entire summer. They are the Blaine, Crescent and Stanley operations, with a capacity of about 7,500 tons daily. Two other mines of the same company, the Wheeling Creek and Lincoln operations, have been idle for some time. Car shortage is now appearing on the B. & O. in the eastern Ohio district, which is reducing the output to a certain degree.

August was the most disastrous month in the history of the coal mining industry in Ohio in point of fatalities, according to a recent report of Jerome Watson, chief of the Ohio Division of Mining. Eleven fatalities occurred during the month compared with one in July. Based on the number of men employed, the record of August was the highest ever known.

In a statement given out by the Hocking Valley Railway Co., covering loadings at the Toledo docks of the company for lake shipment up to Sept. 16 a total of 5,798,115 tons was loaded, as compared with 4,620,543 tons during the same period in 1924.



In the Mountains of Kentucky near Stearns Co.'s Mines

Markings on the cliff, the old settlers say, were made by the Indians, which accordingly they have designated as the "Painted Indian Signs."

PENNSYLVANIA

The Pennsylvania Coal & Coke Co. has awarded a contract for complete electrical equipment for four automatic mining substations to the Westinghouse Electric & Manufacturing Co. Although the total power rating for the four stations is but 1,100 kw., the stations are unusual in that the operation and control are entirely automatic. This contract represents the largest ever awarded for this class of equipment. Three of the stations are at Ehrenfeld; one for the automatic control of a 300-kw. motor generator set, another for a 200-kw. set, while the third will control two 200-kw. sets. The fourth station, located at New Shaft, will control two 100-kw. motor generator sets.

The mines and coke ovens of the Cascade Coal & Coke Co. at Sykesville, which have been idle more than two years, have been started up. It has produced over 325,000 tons in recent years and employs 375 men. It is owned in Buffalo and the product is used in the furnaces of the Rogers-Brown Iron Co., at Buffalo, N. Y.

The Armerford Coal Mining Co. and the Margaret Coal Mining Co., both of Pittsburgh, will be merged under present plans. Special stockholders' meetings were called for Sept. 22 to act upon the merger.

The monthly report of the U. S. Engineers at Pittsburgh for August shows that there were moved 1,553,660 tons of coal and 98,370 tons of coke on the Monongahela River, 452,680 tons of coal and 34,300 tons of coke on the Ohio River and 93,000 tons of coal and 12,400 tons of coke on the Allegheny River.

Eighty-nine of the 195 industrial fatalities reported for the month of August to the bureau of statistics of the State Department of Labor and Industry occurred in coal mines. There were 80 in other industries than that of mining and 25 among the transportation and public utilities companies. Fifty-eight of the mine deaths were in the anthracite district of the state and 31 in the bituminous region.

A coal tipple owned by the Richards Coal Co., at the foot of Edgebrook, Brookline, in Pittsburgh, was damaged slightly by fire recently.

All right, title and interest in the Blanchard-Moshannon Mining Co. was sold to Robert P. Hunter, as trustee, at the receiver's sale held at the plant near Karthaus, Centre County, on Sept. 8. The purchase price was $34,000, subject to mortgages and agreement accounts of a face value of approximately $340,000. Mr. Hunter purchased the property for the Clinton-Moshannon Mining Co., which was recently incorporated and which, it is stated, will operate the mines. Included in the new corporation are the principal creditors of the old Blanchard-Moshannon Mining Co. William G. Blanchard of Pittsburgh, who was the dominating factor in the Blanchard-Moshannon Company, has been eliminated from the new enterprise.

The men at the Jamison Coal & Coke Co. mine near Perryopolis, Fayette County, struck Sept 9, for restoration of the high peak wage scale, which approximates the scale provided at the union mines by the Jacksonville agreement. The wage scale at this plant was reduced to the 1917 scale last spring. This plant has been working steady for some time. About 400 men are employed. The men are still out.

UTAH

Coal production in Utah during July, according to an official report just issued, was 323,087 tons, compared with 364,948 tons in July of last year. Output in July of this year is the smallest since July, 1921, when 278,092 tons was mined in the state.

VIRGINIA

The mines of the Consolidation Coal Co. at Alfredton will be placed in operation again soon, according to an announcement made by the company. Officials have been busy employing men and getting plants in shape to resume operation after a suspension of more than twelve months. Mine No. 225, at Alfredton, is in fact already running.

The Wilson Coal Corporation expects to resume operations at once on Hill Creek, west of Richlands. The plants of the company have been leased for three years by M. Ziegler from the Wilson Coal Corporation, which is owned by Richlands business men. Mr. Ziegler will assume management of the operation at once. A force of men has been at work for some time cleaning up and repairing the machinery preparatory to opening the mines. This company employs between seventy and eighty men. The Bull Creek Coal Co., also located on the Hill Creek branch of the Norfolk & Western, has already reopened its mines and is shipping coal regularly. The mines of this company were opened on Sept. 1 after being shut down for several months. The general office of the company is at Johnson City, Tenn. It is stated that the Glenburke Coal Corporation and the Field Scott Coal Co., also with mines on the Hill Creek branch, are working practically every day.

WEST VIRGINIA

Directors of the Island Creek Coal Co. have declared an extra dividend of $1 a share on the common stock in addition to the regular quarterly distribution of $2. Dividends of the same amount have been paid on the common stock in the seven preceding quarters. The regular quarterly dividend of $1.50 a share was also declared. All distributions are payable Oct. 1 to stockholders of record Sept. 21.

According to statistics just compiled covering the production of the Logan field, August, 1925, proved to be the biggest month in the history of the field. Approximately 36,400 cars of coal were shipped. The record of week ended Aug. 15, when 8,546 cars of coal were taken out of the field. Thus far this year production is almost 2,000,000 tons in excess of that for the corresponding period of last year.

The Soviet commission of Russia has just completed a visit to the mining fields of southern West Virginia along

the Norfolk & Western Ry. In the party were Prof. Leo D. Scheviakoff, professor of mining engineering of Ekaterinoslav Mining Academy; Dimitri M. Souchevski, chief engineer, Cherbinovka Coal Mines, and Robert P. Waggoner, director of the bureau of construction, United Coal Industries of Donetz Basin. S. Rosoff, of the Amtorg Trading Corporation, American representative for large mining trusts of London, Moscow, Kharkoff, Vladivostok and other points, acted as interpreter for commission.

The United Mine Workers have erected additions to the barracks at Rosemont and Wendel in the Flemington field.

The Dixie mine of the Dixon Coal Co., on the Western Maryland Ry, began operating non-union early in September.

The mining extension department of West Virginia University began registering students in all of its classes Sept. 21. Classes are first being organized and work will begin next week and continue until the latter part of May, 1926. During last year there were 1,315 men registered in the classes compared to 500 six years ago. Homework and examinations are a part of the course prescribed. Classes probably will be established in coal mining regions, where the largest number of coal miners and officials can be reached and indications are that the Welch, Williamson, Mount Hope, Montgomery, Logan and Wheeling sections will be awarded schools this year. There is a far greater demand for schools this year than ever before.

A circular letter was issued Sept. 16 by Van A. Bittner, chief international representative in West Virginia, instructing every local union of the United Mine Workers in northern West Virginia to appoint a committee of three to act as an educational committee, whose duty it shall be to obtain the necessary school books for the children of striking miners, because in West Virginia the parents purchase their children's books in the majority of the school districts. The letter suggests that members exchange books where possible.

Norton mine of the West Virginia Coal & Coke Co., on the Charleston Division, B. & O., resumed operation recently. This is a large mine, producing from 40 to 45 cars of coal a day.

Helen mine of the Hughes Coal Co., at Gypsy, Harrison County, was recently equipped with a 200-kw. motor generator set, which was used for the first time Sept. 15. The set will receive power from the 22,000-volt line of the Monongahela West Penn Public Service Co., instead of receiving its power from the Clarksburg trolley wires, as previously.

In the first eight months of 1925 the coal mines of the 12½ counties of northern West Virginia produced 14,576,450 net tons of coal. The monthly production was as follows: January, 2,179,200 tons; February, 1,705,400 tons; March, 1,844,250 tons; April, 1,294,650 tons; May, 1,464,950 tons; June, 1,744,750 tons; July, 2,036,650 tons; August, 2,306,600 tons. Most of the tonnage was produced on an open-shop basis after April 1.

A new tipple has been erected at the mine of the Corona Coal Co. at Hepzibah, Harrison County, to replace the plant burned down by incendiaries. Coal is loaded from two openings in the mine by the means of conveyor belts, but the coal is dumped through the same tipple. The improvements cost approximately $35,000.

Under the terms of chapter 87, Acts 1915, passed at the last session of the West Virginia Legislature, the law relating to the issuance of scrip by coal companies and other corporations to their employees has been changed so as to render scrip issued, under the new law, payable only to the employee to whom issued. The new law, which has just gone into effect, further allows such scrip to be made redeemable in merchandise. It is stated that the new law is intended to break up the practice of poolroom operators and various others who have for many years been in the habit of buying scrip from employees and hoarding it up in large amounts and then presenting it for payment several months after it was issued.

The fact that the Paisley interests, operating in the Wheeling district, have adopted the plan of paying their employees only once a month instead of semi-monthly as provided in the union contract may lead others to adopt the same policy although so far reports indicate no requests for permission to do it have been made upon the union. The men at the five mines of the company in the Wheeling district, however, have accepted the new plan, the officials of the union taking the view that it was a matter resting with the men only.

The Poca-Pack Coal Co., with an authorized capital of $125,000, has been organized by J. C. Pack, of Bramwell, and has begun operations with Paul Pack, son of J. C. Pack, as superintendent. The company is owned exclusively by J. C. Pack and family. This property is in the Winding Gulf field, on the Virginian Ry., and was formerly owned by the Smith-Pocahontas Coal Co., the property having been sold at public auction in July. The plant is thoroughly equipped to ship 10,000 tons a month of No. 3 and No. 6 Pocahontas coal. Mr. Pack is well known in the Pocahontas trade and has been closely identified with the development of the coal industry in the southern part of West Virginia for many years.

CANADA

Production of coke in Canada in June receded to 109,694 tons from 130,068 tons in May and 131,484 tons in April. A loss in output was reported by all provinces.

William Sherman, president of District No. 18, United Mine Workers, including Alberta and a part of British Columbia, has resigned his position and is leaving for the United States. Until his successor is appointed the interests of the organization will be looked after by Robert Livett.

Traffic

Hold Hearing on Rates To East St. Louis

Taking of testimony in the Perry Coal Co. application for reduced freight rates on coal shipments to East St. Louis, Ill., were resumed before the Illinois Commerce Commission in the East St. Louis City Court on Sept. 15. Judge George W. Pillow of Marion, Ill., presided.

The case is directed against the Alton & Southern R.R., but nine other coal hauling roads are affected. They are the Pennsylvania, Southern, Illinois Central, Baltimore & Ohio, Illinois Traction, Terminal Railroad, St. Louis & O'Fallon, East St. Louis & Suburban and Belleville Electric.

Twenty-three coal companies are interested. They seek lower rates on coal shipped into East St. Louis from close-in mines.

There are two other cases pending before the commission. One affects mines within a radius of 20 to 60 miles of East St. Louis and in the other coal companies outside that zone are seeking to benefit by any reduction in freight rates granted the other two zones.

The coal companies contend that Illinois freight rates are high compared with those in Indiana and other states where conditions are similar.

Coming Meetings

National Safety Council. Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

Tenth Exposition of Chemical Industries. Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

Alabama Mining Institute. Annual meeting, Oct. 6, Birmingham, Ala. Secretary, J. L. Davidson, Birmingham, Ala. The Seventh Annual First-Aid Field Meet also will be held on this date.

American Gas Association. Annual meeting, Oct. 12-16, at Atlantic City (Steel Pier), N. J. Secretary-manager, Alexander Forward, 342 Madison Ave., New York City.

Kanawha Coal Operators' Association. Annual meeting, Oct. 15, at Kanawha Hotel, Charleston, W. Va. Secretary, D. C. Kennedy, Charleston, W. Va.

Electric Power Club. Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

American Welding Society. Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

Canadian Institute of Mining and Metallurgy. Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

Harlan County Coal Operators' Association. Annual meeting, Nov. 18, at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

American Society of Mechanical Engineers. Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

Fourth National Exposition of Power and Mechanical Engineering. Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

Coal Mining Institute of America. Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

Obituary

Dr. Arthur Jenkins, 54 years of age, of Harlan, Ky., half owner of a mine near Harlan, died at a hospital in Lexington, Ky., on Sept. 5, of pneumonia. His son, Raymond Jenkins, travels in the Southeastern Kentucky mine section for the Hercules Powder Co. Two other sons and his wife survive.

Alfred Reddington, 65, of Charleston, W. Va., died in a Charleston hospital after an illness of several months. In 1887 Mr. Reddington went to West Virginia, locating in McDowell county as an engineer for the Turkey Gap Coal Co. and Crozer Coal & Coke Co., and also for the Crozer Land Co. In 1900 he became general manager of the Marmet Coal Co., serving with that company until 1907 when he resumed his private practice as civil engineer. He is survived by his wife, five daughters and two sons, three sisters and two brothers.

W. P. Johnston, 39, president of the Johnston Brothers Coal & Coke Co., and president of the Johnston Brothers Mining Co. of Wheeling, W. Va., died while seated on a chair in his bedroom at 5:30 a.m., Sept. 15. He had just recovered from an attack of peritonitis. Mr. Johnston was graduated from Linsly Institute, Wheeling, and for ten years had been one of the leading business men of the city. Funeral services were held Thursday afternoon, Sept. 17.

On Sept. 13 death claimed **L. A. Butterfield,** age 70 years, of Birmingham, Ala. He succumbed to an apoplectic stroke which he suffered three days earlier. Mr. Butterfield was long associated with mining interests in Alabama, being connected at different times with the Tennessee Coal, Iron & Railroad Co., Sloss-Sheffield Steel & Iron Co. and Tutwiler Coal & Coke Co. He came here from Charleston, S. C., in 1886. At the time of his death he was secretary of the Alabama State Land Co., owners and dealers in mineral lands. He leaves a widow, three daughters and one son.

Alfred Frerk, senior member of the firm of Henry Frerk, coal dealers of Chicago, and treasurer of the Chicago Coal Merchants Association, died Sept. 11, of heart disease at his home, 3655 North Harding Avenue, Chicago. Mr. Frerk, who was 51 years of age, was born in Chicago and virtually grew up in the coal business. He was an enthusiast in the development of the Villa community district and was an organizer of the Four Seasons Club of America.

Industrial Notes

P. S. Gardner, president, **American Rheolaveur Corporation,** New York, and Andrews Allen, of **Allen & Garcia Co.,** engineers, Chicago, have returned from Europe, where they spent six weeks jointly inspecting installations of the Rheo coal washing system at prominent coal-mining plants in England, Wales, France, Belgium and the Saar. Mr. Allen states that his investigations and studies show the Rheo-washer to be ideally adapted to meet coal-preparation needs in this country. Mr. Allen announces that arrangements have been made with the American Rheolaveur Corporation for the Allen & Garcia Co. to install Rheo coal washing plants in the United States.

L. M. Zimmer has been appointed general sales manager of the **Linde Air Products Co.,** manufacturers of oxygen, and of the welding gas division of the **Presto-O-Lite Co., Inc.,** manufacturers of dissolved acetylene, succeeding L. M. Moyer, who resigned Aug. 1, 1925.

On Oct. 1 the **Hydrotator Co.** will move its Philadelphia office to New York City, combining it with the office of Edward B. Day at 110 E. 42nd St. Mr. Day is president of the company.

The Kuhlman Electric Co., of Bay City, Mich., announces the appointment of the **D. H. Braymer Equipment Co.,** 727 W. O. W. Building, Omaha, Neb., as district representative in Iowa and Nebraska.

The Conveyors Corporation of America, 326 West Madison Street, Chicago, announces the appointment of **Rowland & Burns,** 39 Cortlandt Street, New York City, as district engineers for New York and vicinity.

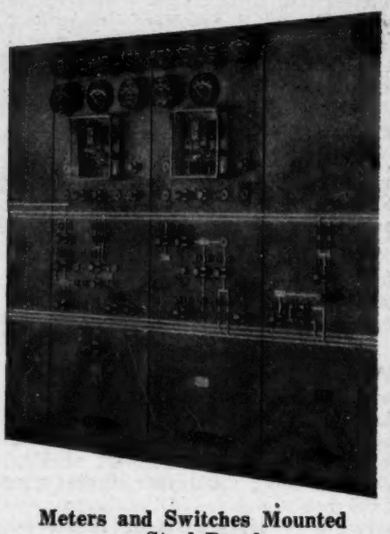
New Equipment

Steel Switchboard Proves Itself Suitable

A new type of switchboard, constructed of stretcher-level sheet steel, has been designed by the Westinghouse Electric and Manufacturing Co., that may be used advantageously in power plant and substation installations. This new type of switchboard is light, substantial, sturdy and easily erected.

The influx of steel switchboards has been a gradual one since 1915 when it was found that the ordinary slate and marble boards would not stand up under severe operating conditions. They were brittle and easily broken and were subject to stain by oil which marred the appearance of the board. In addition they were heavy and cumbersome.

For some time stretcher-level steel switchboards have been used on small installations in a more or less experimental way and have proved successful, so that they are now being installed on larger projects. The outstanding features of this new type of board are its lightness, substantial nature, appearance and inexpensiveness. The erection and maintenance costs are lower than those of the slate and marble boards. Their erection, in addition to being cheaper, is more simple because the framework is an integral part of the panels.



Meters and Switches Mounted on Steel Panels

Switchboards made of sheet steel like this one cannot be easily broken. They are light and easy to install.

The steel panels are given a baked enamel finish similar to that used in the automobile industry. They thus present a most pleasing appearance and in addition are impervious to moisture and resist corrosion.

Floodlight with Reflector On Rear Door

The Electric Service Supplies Co., of Philadelphia, recently placed on the market a new type of Golden Glow floodlighting projector, known as type FLA-1419, for mine yard or other similar service. This new unit has been designed to provide a simple and rugged housing, being made of cast aluminum alloy in which is mounted a standard 14-in. reflector.

Lamp Has Convenient Adjustments

It is easy to clean the reflector on this lamp because the reflector is mounted on a hinged door. Adjustments of the light are made from the outside.

The design of the body of this new projector is unusual in that the glass reflector is mounted in the door which opens from the back of the case, thus providing easy access for the renewal of lamps and for cleaning the reflector. The door closure is a series of baffles with machined-surface fit and provides a simple, substantial and effective weather-tight joint without any type of gasket.

Easily Focused

This new unit provides ample ventilation through liberally designed apertures at the bottom and top of the body. An easy and simple focusing mechanism is enclosed in the top ventilating cap, which permits focusing of the lamp entirely from the outside and without tools.

The body of the projector is mounted on trunnions in a yoke of ⅜ x 2-in. steel bar stock which may be rotated in the heavy cast-iron base. The curved front glass of the projector is of special heat-resisting pressed glass, approximately ¼ in. thick, which practically eliminates breakage.

These new floodlights when fitted with a 1,000-watt 115-volt PS-52 standard multiple burning lamp may be used successfully with maximum ranges of 3,000 to 3,500 ft. when mounted on towers 70 to 90 ft. high. The light has a soft, non-glaring character and is very penetrating.

A lamp of this character can be easily cleaned or adjusted when located on the top of a mine yard building.